FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Objections to Order Aired at Minnesota Preview

By FRED E. TUNKS
Feedstuffs News Editor

FARIBAULT, MINN.—It was only a "discussion" meeting, but when nearly 100 turkeymen assembled here this week to find out what's boiling on the marketing order hotplate the result was a preview of the show that's likely to be staged when a series of six hearings are opened at Richmond, Va., Nov. 20.

The Nov. 15 preview, one of three similar gatherings on consecutive days at different points in Minnesota, came off in a fitting place. The meeting's attendance grew so large that it was moved from a cafe to the Village Theater.

It was here that industry representatives with the urge to speak up expressed their fears. Collectively they said marketing orders could lead to greater integration in the turkey industry, could result in the squeeze-out of the independent "little man" with no integrated ties, could result in delivering too much power to hatcheries and an administrative committee, could place the industry in a position of pricing itself out of favor with the consumer and could reduce competition within the industry itself.

The Faribault session was the first of three meetings organized primari-

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FEEDSTUFFS *Features This Week*

OUTSIDE SALES—That the feed man must work with his outside salesman to make him most successful is the point of this feature. **Page 17.**

DAIRY CATTLE ITCH—The use of zinc in the cure and prevention of dairy cattle itch and hair slicking is discussed by a Finnish scientist on **page 28.**

PIGMENTERS—This article reports research on the use of pigmenters. **Page 30.**

BEEF CATTLE RESEARCH—Recent beef cattle research at the University of Minnesota is reported on **page 67.**

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Central Soya Has Sales High, 24% Earnings Increase

FT. WAYNE, IND.—A new high in sales and a 24% increase in earnings before taxes was reported today by Central Soya Co., Inc., Ft. Wayne, for the fiscal year ended Aug. 31, 1961. Sales amounted to $298,243,743 for the fiscal year, an increase of 8% over the previous year's $276,073,360.

The report noted that feed tonnage was at a new high.

Earnings before provision for federal and state income taxes were

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Central Soya Mill Under Construction

INDIANAPOLIS—A new feed mill is under construction at Central Soya's Indianapolis plant, it was announced by Dale W. McMillen, Jr., president of the Ft. Wayne based firm. The mill will be located adjacent to the company's present soybean processing and grain storage facilities.

Mr. McMillen said the mill "will enable our McMillen feed division to

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CCC Sales Shift Not Basic Change

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — A shift in the technique of Commodity Credit Corp. corn and sorghum sales policy this week jolted the grain trade. However, this shift does not mean any basic change in the corn sales policy previously in operation.

This week CCC decided that it would make available corn and sorghums at the market price from accumulations representing the certificate pool account of those commodities which USDA has obtained under the feed grain program.

This sales policy makes those stocks available at this time for export sale, and there is no need of procurement through use of payment-in-kind certificates.

Since this harvest has been spotty

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Questions on Turkey Orders Raised; Importance of Hearings Pointed Out

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Through discussion and publication of information about the proposed national turkey marketing agreements and orders, opposition sentiment appears to be increasing. Many now doubt that enthusiasm for the proposals will snowball into the favorable avalanche which some had predicted.

This reporter has been told that a good deal of industry attention should be given to the public hearings getting under way soon. These hearings are a matter of official record which USDA is required to use as the basis for a decision on whether or not to submit the turkey proposals to a nationwide referendum.

Therefore, turkey industry representatives should be prepared to attend the meetings with copies of the proposed orders and a workable knowledge of the contents.

Also, persons in attendance are advised not to appear just as proponents or opponents.

The hearings are primarily for the purpose of eliciting information from government officials. The audience is entitled to ask for a full disclosure of the meaning of an entire order and of its parts, plus projected information on the application to an individual company or person immediately or in the future.

Obviously, members of the audience may express opinions on the proposals, for or against, but a mere expression of opinion will not carry too much weight with USDA officials who use the record to make a report to the Secretary of Agriculture. The Secretary must determine whether evidence produced is sufficient to warrant submission of the proposals to a vote.

Another Commodity

It may be interesting to note that there was a meeting of the National Potato Council this week which was mainly concerned with whether to endorse a national marketing agreement and order for potatoes, with a

(Turn to ORDERS, page 105)

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Oregon Poultrymen Try to Penetrate Economic Haze

By Special Correspondent

CORVALLIS, ORE.—Oregon poultrymen adjusted their bi-focals again this week in an attempt to penetrate the economic haze surrounding their related segments: Market turkeys, turkey hatching eggs, broilers and market eggs.

Near at hand, turkey growers and hatcherymen are eyeing hearings on proposed turkey marketing orders. As a follow-up of a Nov. 7 meeting at Salem, the industry is attempting to acquaint all members with details of the orders.

Taking a longer, but perhaps more concerned look, producers of broilers and market eggs are watching from the sidelines and meeting separately to investigate possibilities of mar-

(Turn to OREGON, page 101)

Broiler Orders? Still Anybody's Guess

By ROBERT H. BROWN
Feedstuffs Special Writer

ATLANTA — The broiler industry is moving toward the home stretch in the question of marketing orders or no marketing orders, but, as one poultry official put it this week, it's still anybody's guess as to which way the race will end.

If marketing orders for broilers were to be authorized by legislation and the question then put to an industry vote, the tally might be just about as close as the last presidential election, the industry observer said.

Two important meetings were slated during a current short period, one in Atlanta Nov. 17 and the other in Columbia, S.C., Nov. 20. Both admittedly are marketing order meetings. What, if any, action might be taken remains to be seen, however.

The Atlanta meeting was to feature speakers attempting to explain every phase of marketing orders. The session was set up to have several officials of the U.S. Department of Agriculture on hand. USDA officials have been in attendance at nearly every meeting that has been held in the broiler area recently. Scheduled to be on hand were two assistant

(Turn to BROILER ORDERS, page 8)

Urges Gigantic Program to Export Meat

ITHACA, N.Y. — A well known poultry and nutrition authority has proposed a gigantic program to furnish cooked, ready-to-eat broiler, turkey and veal meats to nutritionally starved persons throughout the world.

The authority is Dr. M. L. Scott, professor of nutrition and member of the faculties of both the poultry husbandry department and the graduate school of (human) nutrition at Cornell University.

Dr. Scott, who has traveled and is recognized abroad in addition to being a leading agricultural scientist in the U.S., made his proposal in a recent letter to Orville L. Freeman, secretary of agriculture.

The idea was part of a series of observations and suggestions on both world and domestic food and agricultural problems, relating to international relations as well as economic problems.

For one thing, Dr. Scott said that it should be possible to undertake

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Question-Answer Analysis Issued By Farm Bureau

CHICAGO — The American Farm Bureau Federation this week issued a question-and-answer analysis of the nation-wide marketing orders proposed for market turkeys and turkey hatching eggs.

Portions of this analysis, those concerned with provisions which seem to be currently the most confusing to the industry, follow:

Q. Who is eligible to vote on these orders?

A. Only producers of hatching eggs will be allowed to vote on the hatching egg marketing order. Only producers of market turkeys will be al-

(Turn to QUESTIONS, page 4)

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The regional circulation of this issue is concentrated in the southwestern states

Asking for the Order

DEVELOPMENTS AT THE FIRST public hearing on the proposed turkey marketing orders and agreements at Richmond, Va., Nov. 20-22 will be watched closely by the feed industry as a clue to the approach feed companies will take toward the subsequent regional hearings. Beyond that, the Richmond hearing also should help shape the over-all strategy of those in the industry who oppose government controls.

Strategy is sorely needed in the anti-control camp, not only in dealing with the hearings, but in meeting the whole issue of involvement in further economic regulation by government. Oratory will not suffice. Facts and deep probing of the many unanswered questions about how the proposed orders will affect all segments of the turkey industry will be required. From this sort of an approach could develop economic reasoning that could be invaluable in influencing a "no" vote by producers in a referendum. An opportunity to pursue this strategy is available in the hearing procedure.

ANOTHER STRATEGIC approach which could be adopted by feed men opposed to controls would be to merely observe the hearings, avoid a discussion of their concerns about the ultimate problems controls would produce. It is possible that considerable independent producer opposition to controls will evolve, because of the fear expressed by some that controls would only serve to strengthen the position of integrated operators. The politically-sensitive administration would take more than a little notice of testimony of this kind.

Another strategic position might serve the interests of control opponents. They might lend tentative and nominal support to those who favor turkey controls, take an attitude of "let's give it a try" and hope like heck that the program proves to be a dismal failure. This might be a most effective way to stop the talk about broiler and egg controls, but it also could be downright risky. A failure could lead not necessarily to abandonment of control efforts, but just as likely to pressure for even stronger controls on the premise that the first effort wasn't sufficiently snug.

The ultimate in strategy would be stronger moves on the political front, by persuading congressmen and senators that some of the exuberance of the control salesmen could just as well be put under control "for the good of the party."

WHICH STRATEGY would be best? Somehow, someone must determine this and determine it shortly. It is earnestly hoped that the Richmond hearing will offer some valuable guidelines. Those selling controls have a big head start in rapping on a lot of doors "asking for the order." How many orders will they get—two or half a dozen?

Top of the Hopper

DESPITE THE EXTREMELY LOW broiler prices, broiler operations have been continuing in business, although there have been cutbacks and some drop-outs. One veteran industry observer said that many operations have been continuing longer during the current price depression than in previous loss periods. He expressed fear that the great losses of capital would bring some major instances of business mortality if the situation persisted for long. However, there recently have been some indications of cutbacks and at least temporary withdrawals from the field. For example, one of the larger firms is reported to have shut down some feed and broiler operations at least for the time being.

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THE FEED INDUSTRY may look forward to having some new measurements of its size and shape when the U.S. Bureau of the Census completes

(Turn to **TOP OF THE HOPPER**, page 101)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Volume of feed business throughout the nation ranged from steady to lower this week. In several areas business held at the good substantial volume of last week while in others it was described as being slow.

Poultry feeds were said to be moving slowly in some areas. Turkey feeds are in their seasonal slump. Cattle feeds are not yet at their peak volume because some grazing is still being done. A snow cover in northern areas is expected to boost this business. Hog feeds continue to move well in swine areas.

Among factors which may affect price lists are the strong showing made by millfeeds and some further fluctuation in soybean meal prices.

The wholesale feedstuff price index advanced 1.6 points and finished at 82.7 this week. That compared with 71.9 a year earlier. The feed-grain index edged up to 65.0 as against 64.3 a week ago and 56.3 a year ago.

The hog-corn ratio, based on Chicago prices, advanced to 15.2 this week from 14.9 last week. The comparable week a year ago it stood at 17.7. (Major market roundup and ingredient quotations appear on pages 102-104.)

Northwest

Although most feed men could not say business was better this week than last, none of them were complaining about the high steady level of the feed volume.

No one feed item was responsible for the generally good level of business. Of course, turkey rations are in a seasonal decline, and some feed men don't expect turkey growers to bring in too many replacements at this time. Some company spokesmen also indicated that cattle feed volume had not yet hit its stride.

Word from those who calculate the value of the end product is that the new price lists will not vary much from the old ones. A possible exception is those feeds containing millfeeds, which have advanced strongly in the ingredient trading.

Southwest

Demand for formula feeds in the Southwest continues brisk with most mixers operating a strong five days, with six day runs not uncommon.

There were isolated reports of some slowing in feed shipments but not enough to establish a trend. The cold weather and snow which covered a large part of this trade area should prove a stimulus.

Cattle feed shipments continue heavy and most mills have a small backlog of directions on shipments. There were some reports of improved cattle feed sales.

Poultry rations were fair with broiler feeds and egg feeds moving in fair volume.

Pig and hog feed sales are still heavy and represent a good portion of the total run in some areas.

Price lists will not show too many changes but there may be some small increases in some rations due to higher ingredient costs.

Northeast

Dairy feed demand picked up in western New York and held at excellent levels for the second week in a row in the New England states. There was a "lot" of mixed feed turnover in the western New York area as mixers stepped up their running time.

Demand for egg mashes remained constant in both areas, but broiler and turkey feed demand was nil in western New York. One mixer in the Bay State said he looks for a good poultry demand this winter.

Egg prices held steady in New York but advanced 2 to 4¢ doz. in the New England states as "outside" competition lessened. Broiler prices, at 14¢ lb. in the latter area, were steadier than the trade had expected in face of the coming holidays. Turkeys at 29¢ lb. were 12 to 14¢ below year-ago levels.

Running time of formula feed manufacturers in the western New York area rose to 40 hours from 36 in the previous week. In the New England states it ranged from 36 to 40 hours.

Southeast

Formula feed business in the Southeast is reported as being fair to good, depending upon localities. Broiler feed manufacturers continue to operate at about 70% of normal.

Broiler prices advanced 2¢ lb. this week, with sales being made at 12¢ lb., f.o.b. the farms. Although there has been some rain in the Southeast within the last week, pastures were too far gone for the rain to be of any help, and dairymen and cattlemen are having to increase their use of concentrates. The demand for dairy feed is also showing a marked improvement.

Central States

While volume of sales for the first half of November has not shaped up as well as volume for the month of October, it's still a long way from being unsatisfactory.

Running time is holding up nicely to the standard 40 hour week basis, and shipping directions continue to run along on a fairly even keel. The trade is adjusting itself to the cutbacks in both broiler and turkey feeds but some of the declines on those two lines have been fairly well offset by compensatory improvement in both egg and hog feeds.

Weather has been excellent for pasturage, and, while temperatures have been slowly gravitating toward the seasonal range, demand for cattle feed in this area has not shown the broadening that has been noted in some sections.

Ohio Valley

Demand for feed slowed down to a walk this week. Little interest was shown except in cattle and hog feeds, which picked up to a degree.

At retail markets, prices were reduced on poultry to encourage buying in competition with turkeys, which are in good demand. Egg prices remained steady.

Delmarva

Warm weather with sufficient rainfall has resulted in excellent growth of winter cover crops. Farmers have begun grazing dairy and beef cattle on this cover to conserve concentrates. Pastures have been holding their own, too, still providing abundant grass.

Hog prices make for a favorable corn-hog ratio. The egg business is more favorable too. A dozen eggs will buy 12.6 lb. of feed compared with

(Turn to **MARKETS**, page 107)

Specialists at Peter Hand evaluate latest scientific developments—even operate a 450-acre farm where new formulations are tested on a commercial scale.

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Egg Set, Chick Placements Rise

SALISBURY, MD. — The national egg set and chick placement totals were up again last week.

Seventeen of the 22 important broiler producing states reported increases in chick placements. Eighteen of the states had increases in the number of eggs set.

Hatcheries in the 22 states set 42,239,000 eggs during the week ended Nov. 11. This was 4% above the previous week, but 2% below the corresponding week a year ago. States for which sizeable increases were reported are Arkansas, Pennsylvania, Georgia, California and Mississippi.

Placements in the 22 states totaled 29,620,000 chicks. This was 2% above the previous week, but 1% below the corresponding week a year ago. States for which sizeable increases were reported include Arkansas, Delaware, West Virginia, Pennsylvania and North Carolina.

Broiler prices showed a slight improvement during the week. The average price paid on the farm in Delmarva was 12.46¢, compared to 12.38¢ the week before. A year ago the price was 17.63¢, according to the Maryland-Delaware crop reporting service.

Dr. Becker Named Chairman of ANRC

WASHINGTON—Dr. D. E. Becker, University of Illinois, will head the Animal Nutrition Research Council as chairman during the coming year.

Dr. Becker and eight other members of the ANRC were named during the council's recent annual meeting at the Shoreham Hotel, Washington. Other officers include Dr. R. F. Miller, Merck chemical division, vice chairman, and Dr. Kenneth Maddy, Monsanto Chemical Co., secretary-treasurer. Serving on the board for the coming year will be: Dr. Leo Friedman, Food and Drug Administration; Dr. Robert V. Boucher, Pennsylvania State University; Dr. Stanley R. Ames, Distillation Products Industries; Phillip Derse, Wisconsin Alumni Research Foundation; James Fritz, Dawe's Laboratories, Inc., and Dr. Forest Quackenbush, Indiana state chemist and feed commissioner.

Controls Opposed

CONCORD, N.H.—The New Hampshire Farm Bureau Federation promised a vigorous fight against government control of the poultry industry in a resolution approved at the final session of the 46th annual convention of the organization here Nov. 8.

The federation also called for an end to New Hampshire's livestock and poultry tax.

Cargill Buys Terminal

BURBANK, WASH.—Cargill, Inc., Minneapolis, has purchased River Grain Terminals, a grain collecting facility here, it was announced by Lloyd Nelson, Cargill branch manager in Portland.

The Burbank terminal, located in northwestern Walla Walla county, has a capacity of about 5 million bushels, making it one of the largest on the Columbia river outside of Portland and Vancouver.

Manager of the Burbank operation will be Louis Stewart, formerly in charge of company properties in the Klamath (Ore.) basin area. Assisting him will be John Tomkins, formerly manager of the firm's Pendleton office.

River Grain Terminals was established in 1956 on land made available by the Port of Walla Walla. The terminal was enlarged in 1957 and in 1959. It consists of several tanks, two large, flat buildings, barge loading facilities and docks.

PENNSYLVANIA GROUP OPPOSES ORDERS

HARRISBURG, PA.—Opposition to the present provisions of the proposed turkey and turkey hatching egg marketing orders was recorded here last week by a group of Pennsylvania turkey growers.

The proposed orders were discussed at length by Richard Ammon, executive secretary, Northeast Poultry Producers Council, and Hollis Hatfield, executive secretary, Pennsylvania Farmers Assn., at a meeting held in the office of the Pennsylvania Poultry Federation.

Further discussion and clarification of the orders is scheduled for another meeting to be held Dec. 1 at Stock Yards Inn, Lancaster, Pa., starting at 1 p.m.

Delmarva Broiler Prices at New Low

NEW YORK — Broiler prices to growers Nov. 16 were mostly 11¢ lb. in the South and 12-12.4¢ in Delmarva, a new low for the eastern seaboard region, the U.S. Department of Agriculture reports.

Market observers said live offerings were in light supply, but generally adequate for the reduced demand created as some plants shifted to processing turkeys and other holiday items this week.

Turkey Trading at Peak as Holiday Nears

With Thanksgiving a week away, turkey trading reached peak proportions late this week. Some pressure was felt by processors, but vast cold storage holdings were generally more than adequate to meet increasing demand.

Minnesota live prices Nov. 16 were 17¢ lb. for young hens, and 15¢ for young toms, steady to ½¢ stronger than a week earlier.

Ready-to-cook turkeys gained price strength, too. Consumer size tom prices were quoted Nov. 16 at ½-2¢ higher than a week earlier. Young hen prices remained unchanged. Fryer-roaster prices gained ½-1¢.

Egg Prices Still Rising

NEW YORK—Egg prices continued their upward trend during the reporting week ended Nov. 15, according to the U.S. Department of Agriculture. Offerings were reported light on large eggs, ample on mediums and lower on smaller sizes. Buying interest remained generally good.

QUESTIONS

(Continued from page 1)

lowed to vote on the proposed marketing order for market turkeys.

Q. Who is a producer?

A. The proposed order defines a producer of turkey hatching eggs as any person directly or indirectly engaged in the production of hatching eggs who has a proprietary interest in the eggs or in the facilities used for the production of hatching eggs (provided these facilities are used for that purpose).

Similarly, a producer of market turkeys is defined as any person directly or indirectly engaged in the commercial production of turkeys who has a proprietary interest in the turkeys or who in a proprietary capacity operates and controls the facilities for the production of turkeys (and uses these facilities for that purpose).

By this definition, any feed company, processor, hatcheryman, or other individual who has any financial interest in turkey hatching eggs or market turkeys would be eligible for one vote in one or both of the orders. However, each eligible producer will only get credit for his proportionate share of the total volume produced in joint ventures, so far as the "volume vote" is concerned.

Q. What results would be required to have a vote carry on either of the proposed orders?

A. Two-thirds of those producers voting by number or by volume would have to vote in favor of either order for it to become effective. It is possible, of course, that one order might be approved while the other might be voted down.

Q. What happens if in the referendum the producers voting by number favor the marketing order but by volume do not or vice versa?

A. Under these circumstances the final decision about putting the order into effect is made by the secretary of agriculture.

Q. The 1959 Census of Agriculture reported 51,735 farms which kept turkey hens for breeding and 86,715 farms where market turkeys were raised. Will all of the producers associated with these farms be eligible to vote?

A. Under the proposed orders, no exemptions are provided. However, the secretary's advisory committee has reportedly recommended that any person with 50 or more breeder hens be eligible to vote in the referendum for a marketing order covering hatching eggs. This committee also has reportedly recommended that a producer of market turkeys must raise 400 or more birds to vote in the referendum for a marketing order on market turkeys. It is, however, up to the secretary to determine who is eligible to vote.

Q. How will volume be regulated?

A. There are three proposed methods of regulating the volume of hatching eggs put in incubators and one method of regulating the volume of market turkeys moved into normal marketing channels.

Q. What procedure is proposed for regulating hatching egg volume under method number one?

A. The secretary would establish the desirable quantity of hatching eggs which all handlers could set or cause to be set in any allotment period. After the quantity is established, the committee would pro-rate this quantity among handlers of hatching eggs by assigning to each handler an allocation base and allotment for the allotment period. Allotment periods will be recommended by the committee and approved by the secretary.

Each eligible handler would have the option of being assigned an allocation base computed in one of the following ways:

1. Using the total number of eggs which he set during the 12-month period ended Sept. 30, 1961 (one-year base).

2. Using the total number of eggs which he set in the 24-month period ended Sept. 30, 1961 (two-year base).

3. By requesting a special allocation based on previous history if he had set no hatching eggs during the year ended Sept. 30, 1961, or if the number of eggs set during that period was not truly representative of his normal operations. This request would be ruled on according to regulations recommended by the committee and approved by the secretary.

Each handler who has an allocation base would be given an allotment of hatching eggs that he could set during an allotment period. Any part of the allotment not used within an allotment period can be carried over to the next period, subject to a percentage limitation prescribed by the secretary.

Bases and allotments would not be transferable except as authorized by regulations recommended by the committee and approved by the secretary.

Q. What procedure is proposed for regulating hatching egg volume under method number two?

A. The secretary would establish the desirable quantity of hatching eggs for the allotment period which all handlers could receive at hatcheries for hatching in the allotment period. The committee would pro rate this quantity among handlers by establishing an allocation base and allotment for the allotment period. The time periods would be the same as in method number one; however, each allocation base and allotment would be referable to each producer of hatching eggs.

Allocation bases and allotments would not be transferable except as authorized by regulations.

Q. How would hatching egg volume be regulated under method number three?

A. The secretary would establish the desirable free quantity of hatching eggs which all handlers could set at their hatcheries, for their own account or for others, for such period or periods as he may prescribe. When the secretary concludes that the volume of eggs to be set by all handlers will be in excess of the desirable free quantity for any period or periods, he could require that a percentage of those eggs be set aside. The same percentage would apply to each handler. Each day's receipts of hatching eggs from any person, or the handler's own production, would be considered a separate lot. The excess eggs would be disposed of according to some method recommended by the committee and approved by the secretary. For example, they could be sold to breakers who would freeze or dry them for human consumption.

Q. How would market turkey volume be regulated?

A. If the board or committee recommends, and the secretary concurs, a desirable free quantity of turkeys would be established which all handlers could freely use or dispose of during a given period or periods. If it appeared that there would be a surplus, the secretary would establish surplus percentages for a given period or periods. Each handler would be required to set aside and withhold from marketing a quantity of turkeys computed by multiplying the quantity of all turkeys handled by him in such period by the applicable surplus percentage.

For example, if it was determined that the surplus percentage was 10, then 10% of all the market turkeys received by handlers would have to be set aside. The committee, with approval of the secretary, could prescribe the grade, size, or quality of turkeys to be set aside to meet the surplus percentage. The handler's free quantity turkeys could be disposed of by him in any marketing outlet, subject, however, to any grade, size, or quality restrictions that might be imposed.

All turkeys set aside to meet the handler's setaside would have to be free and clear of all liens and held for the account of the committee until the handler was freed of that responsibility. The committee would be authorized to negotiate loans on setaside surplus turkeys for the purpose of paying the cost of processing, storing, and other costs, and/or for making advance payments to producers.

Handlers would be compensated for their costs, with the various charges being deducted from money owed to producers.

Q. How will surplus turkeys be disposed of?

A. Surplus turkeys cannot be used or disposed of by any handler. The committee would have the power and authority to sell and dispose of all setaside turkeys, as follows: (1) Sale for export; (2) sale to government agencies for noncompetitive uses; (3) to other outlets which presumably are noncompetitive with normal outlets for turkeys, and (4) to all other outlets, including normal outlets, to the extent feasible and consistent with the purposes of the order, but only with the approval of the secretary.

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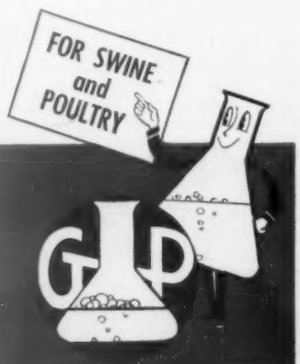

GRAIN PROCESSING CORPORATION

Tentative Energy Standard For Milk Production Explained

By ROGER BERGLUND
Feedstuffs Managing Editor

BUFFALO—A new tentative energy standard for milk production and other aspects of ruminant feeding were presented in discussions at the annual Cornell Nutrition Conference in Buffalo.

Dr. J. T. Reid of Cornell pointed out that existing feeding standard allowances of energy are too low for high levels of milk production and showed a tentative energy standard. Also discussed by Cornell scientists were pelleted roughages for beef cattle, research on nitrogen utilization and requirements in ruminants and the calcium requirement of dairy calves.

(The complete Cornell conference proceedings are available at a price of $1.50 from Animal Husbandry Department, Cornell University, Ithaca, N.Y.)

ENERGY REQUIREMENTS FOR LACTATION BY THE DAIRY COW—There are a number of indications that existing feeding standard allowances of energy are too low for high levels of production, and, at least, they need reappraisal, said Dr. J. T. Reid of Cornell. Dr. Reid summarized the basis of existing energy standards for milk production, recorded some results of recent studies and thus reexamined the energy requirements for this function.

The report included a tentative energy standard for milk production.

Dr. Reid presented indications of the inadequacy of existing feeding standard energy allowances. Feed input-milk output experiments indicate that existing standards are too low for high milk yields. Many cows would produce more milk if provided energy above the feeding standard level. Dr. Reid discussed causes of diminishing returns per unit of energy input as the input increases, and he told of the relation of body tissue gain and utilization to dietary energy needs.

He went on to discuss energy requirements and to present a tentative energy standard for milk production. The discussion covered the relationship between feeding standards and tables of feed values. Dr. Reid said it is clear that, even though the combination of feeds composing a given ration is the same and remains in the same proportions, the nutritive value of the ration is not a constant, but it depends particularly upon the level at which the ration is ingested.

From the practical viewpoint, the effect of level of intake on the nutritive value of the ration is the most important economics-nutritional problem. Neither the existing tables of feed values nor the feeding standards take this effect into account. From the standpoint of the mechanics of application, it is more convenient to account for the level-of-intake effect in the feeding standard than in the table of feed values.

Dr. Reid said that because of the apparent limitations of existing energy standards for milk production and the increasingly acute needs of the modern high producing cow, an attempt has been made (Figure 1) to set forth a tentative feeding standard for milk production by cows which are neither gaining nor losing energy from the body. This standard is predicated on the basis that the "true" TDN value of rations made up of increasingly greater proportions of concentrates declines as the level of intake increases, and that the maintenance requirement of the 1,000-lb. cow is 7.0 lb. TDN per day and varies for cows of other sizes in accordance with body weight pounds.

The graduated allowances represent a composite of the theoretical principles governing the utilization of energy by the cow and the TDN requirements determined by Haecker with low producing cows and those of the Cornell workers estimated from data obtained with medium to high producing cows. The basis for the requirement for cows yielding up to 65 lb. of 4% FCM per day is more reliable than that of the requirement for cows producing above this level. Although this standard is intended to be tentative and might need to be modified as more adequate data are obtained, it is considered to represent more accurately the energy needs of both low and high producing cows than do existing standards.

Dr. Reid also discussed the influence of body-tissue catabolism on the dietary requirement for energy. He said that even though body tissue can be relied upon to provide some of the energy needed for the production of milk early in lactation, the alternate gaining of body tissue during late lactation and the dry period and utilizing body energy during early lactation is an energetically wasteful process. In order for high producing cows to realize their productive potential, it is necessary that they be provided sufficient energy concurrently to produce the amount of milk of which they are capable. Although very high producers may not consume the amount of feed theoretically needed during early lactation, the standard represented by Figure 1 should be considered as the goal in feeding practice until more adequate data become available, said Dr. Reid.

PELLETED ROUGHAGES FOR BEEF CATTLE—Dr. J. I. Miller of Cornell reviewed information on pelleted hay and complete rations for cattle and outlined the findings in some Cornell work.

Citing work during the past few years, Dr. Miller said some general conclusions from data to date indicate the following:

(1) The pelleting of low quality hay results in a greater improvement in feeding value relative to the same hay fed in long form than if high quality roughages are used in the same type of comparisons.

(2) Complete pelleted rations containing less than 50% roughage have not shown consistent advantages for fattening cattle over similar non-pelleted rations. On the average, the cattle have consumed less of the pelleted rations, and the feed required per hundredweight of gain has been frequently greater.

(3) While cattle may be fed safely on roughage pellets alone, the cattle seem to prefer some long roughage and will consume more bedding than usual.

Dr. Miller went on to tell of Cornell research to determine the value of hay pellets as a partial replacement for hay in wintering-growing rations for steer calves and as a partial replacement for corn grain in fattening rations for cattle fed in drylot and on pasture.

He reported:

The feeding of 3 lb. of hay pellets per head daily along with a full feeding of average to good quality baled mixed hay resulted in about 25% greater gain by 6-12 month old beef calves than similar calves fed mixed hay alone. The feed replacement or equivalent value of the hay pellets based on the feed required to produce 100 lb. of gain showed the hay pellets contributed to the rations about 50% greater feeding value than would be expected from comparable long hays.

Alfalfa pellets proved efficient for replacing part of the grain in typical fattening rations for beef calves fed in drylot. Mixed hay pellets of fair to good quality have shown a relatively low value for replacing either corn grain or good pasture for yearling steers being fattened on pasture.

The original quality of the forage made into pellets had an important influence on their feeding value.

NITROGEN UTILIZATION AND REQUIREMENTS IN RUMINANTS—Dr. J. K. Loosli of Cornell told of research indicating that differences in nitrogen utilization from various sources may become less important after rumen adaptation has occurred. The possible importance of rumen adaptation in modifying nitrogen requirements of cattle and sheep requires investigation, he said.

Dr. Loosli mentioned earlier studies and then told of recent lactation studies which involved use of urea, biuret, soybean meal and linseed meal.

Last year it was reported that in growth and nitrogen balance experiments biuret appeared to be a slightly less effective source of nitrogen than urea but that most of the difference occurred at the start of the test. This evidence that ruminants adapt more slowly to biuret than to urea is in agreement with earlier tests.

Dr. Loosli went on to tell of lactation experiments carried out to compare urea and biuret with vegetable protein meals as supplementary nitrogen sources for dairy cows.

From one of the studies, it appeared possible that there may be very little difference in the value of urea, biuret and soybean oil meal as nitrogen sources for lactating cows after adequate adaptation. This view is in agreement with other studies with sheep. Experiments of longer duration would appear likely to give more favorable results than previously reported for urea.

A second lactation study was carried out to compare urea with vegetable proteins.

"In earlier studies using reversal-type designs milk production was significantly higher on concentrate mixtures containing soybean oil meal than with either linseed oil meal or urea," said Dr. Loosli. "It is clear that no such differences occurred in the present continuous study. Milk

(Turn to STANDARD, page 106)

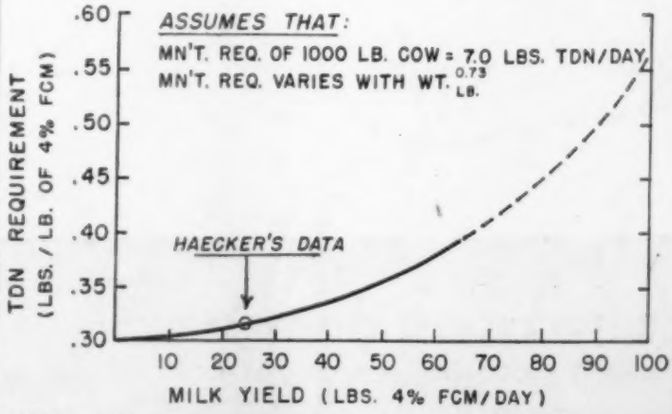

FIGURE 1—Tentative feeding standard for milk production by cows not gaining or losing body tissue.

J. R. Lindell Heads Ingredient Firm

PRINCETON, MINN.—The election of J. R. (Dick) Lindell as president and general manager of Mille Lacs Products, Inc., Princeton, has been announced by the firm's board of directors.

J. R. Lindell

The company supplies protein ingredients to the livestock and poultry feed industry. Principal products are feather meal, poultry by-product meal, full-fat soybean meal and animal meat scraps.

Mille Lacs Products is a newly formed company. The present facilities were purchased from a local Princeton firm.

"Development of the area's turkey and chicken broiler industry can be improved by better utilization of by-products," said Mr. Lindell. "Creating a market for feathers enables processors to pay top prices to the grower and at the same time hold consumer costs to reasonable levels."

Mr. Lindell, who has been associated with the feed industry for 22 years, was formerly marketing director and sales manager of the Peavey Feed Mills division of F. H. Peavey & Co., Minneapolis. He served that firm as assistant secretary from 1952 until being named chief executive officer of Mille Lacs Products. He is also a director of Accessories, Inc., Maple Plain, Minn., fertilizer and home and garden products manufacturer.

In addition to processing poultry and animal by-products, the new company here is planning to produce unextracted soybean meal. A further expansion of processing facilities is scheduled for early 1962. The company, as it expands, expects to be a major market for feathers and offal from the expanding turkey and chicken industries of the area.

Upjohn Co. Announces New Marketing Unit

KALAMAZOO, MICH.—Formation of a new marketing unit, Michigan Agricultural Co., Richland, Mich., has been announced by W. F. Allen, vice president for marketing, The Upjohn Co., here.

Michigan Agricultural Co. will sell products designed for livestock and poultry which are distributed through feed and farm store outlets, the announcement said. Albamix, an antibiotic product for treatment of staphylococcal infections in turkeys introduced earlier this year by Upjohn, is the first to be marketed by the new company, it was stated.

Manager of the new company is Dr. J. T. Bryan, who has been head of poultry products since March of this year.

Creation of the marketing unit is an effort to "serve new customers in the livestock, poultry and feed industry more effectively," Mr. Allen said.

Chicago Feed Club Has Monday Meeting

CHICAGO—The Chicago Feed Club held its regular monthly meeting Monday, Nov. 13, at the Hotel Bismarck, Chicago, the second consecutive time it met on Monday night. Attendance and enthusiasm indicated that this is the best night for meeting, and meetings for the next few months will continue to be on a Monday night, officials said.

Speaker Nov. 13 was Z. C. (Zip) Zeller, Foxbilt Feeds, Des Moines. William Harris, St. Regis Paper Co., president of the club, announced the Christmas party will be at the Illinois Athletic Club Dec. 11.

AAFCO PUBLICATION AVAILABLE IN DECEMBER

CHARLESTON, W. VA.—The 1962 Official Publication of the American Association of Feed Control Officials is expected to be available early in December, reports Marvin H. Snyder, AAFCO treasurer and West Virginia feed control official.

The publication will contain all the changes adopted at the recent AAFCO convention in Washington and will provide a record of all definitions and other information necessary for registration and labeling of feedstuffs.

Also to be included is a bibliography of methods for feedstuffs analysis, with references to the latest AOAC Book of Methods and Journal Article where the actual methods may be found.

"Copies will be rushed to those placing orders as quickly as they come off the press," Mr. Snyder notes. Orders may be mailed to: Marvin H. Snyder, treasurer, Association of American Feed Control Officials, State Department of Agriculture, Capitol Building, Charleston, W. Va. The publication is $5 a copy.

Norman Smith Named To Quaker Oats Post

CHICAGO—Norman W. Smith has been named manager of feed sales development by the Quaker Oats Co., Chicago, it was announced by the company.

Norman W. Smith

Mr. Smith joined Quaker in 1947 as a freight handler in the Chicago warehouse on a part-time basis while a student, and he continued to work for the company during the summer while studying at Iowa State University, Ames. After graduation, he was employed as a feed salesman with the company's central feed division.

In 1952 he was named district representative, two years later became district manager of the central feed division and, in 1959, was promoted to manager of feed sales and dealer development, a post he held until his present appointment.

Alva, Okla., Co-op Opens New Feed Mill

ALVA, OKLA.—The Alva Farmers Cooperative Assn. held a formal opening for its new $200,000 feed mill Nov. 16.

The plant has a 150-ton daily capacity, according to co-op officials. Loading facilities are in a covered dock with five overhead holding bins, and six additional overhead holding bins are located over the driveway. Total capacity of these bins is 130 tons. Inside the plant there are 41 ingredient storage bins. Also on the site, and a part of the cooperative's facilities, is a 1.1 million bushel storage elevator.

Machinery in the new mill includes a 36-in. 140 h.p. W-W grinder, a Roskamp 36 in. by 16 in. 50 h.p. roller mill, a 1-ton Wenger horizontal mixer and a 100 h.p. Wenger pelleting machine.

In addition to the mill and elevator here, the cooperative operates nine elevators in the surrounding region. The new mill will serve customers over a four-county area, officials said.

The co-op sales organization also will handle Nutrena feeds and ingredients shipped from Nutrena's Coffeyville, Kansas, mill, Carl Brammer, Nutrena territory sales manager, said.

Contractor for the new Alva plant was the Bliss Construction Co., Newkirk, Okla.

Official Notes Government Role Growing in Grain, Feed Field

By DON E. ROGERS
Feedstuffs Staff

SPRINGFIELD, ILL. — The growing role of government in the grain and feed industry was cited in a speech to feed and hatchery businessmen of Illinois in a meeting at Springfield.

Alvin E. Oliver, executive vice president of the Grain & Feed Dealers National Assn., pointed to marketing orders and the feed grain program as "prime examples" of the growing governmental role.

Mr. Oliver addressed the annual joint meeting of the Illinois Feed Assn. and the Illinois Poultry & Hatchery Federation, which was attended by more than 700 persons. In his speech, he outlined agriculture control programs which, he told the feed men and hatchery operators, have placed government "in the center of your business."

Mr. Oliver was one of several speakers on the program for the two-day meeting. In other presentations, modern management and sales techniques were stressed in an effort to create a more effective feed and hatchery industry in Illinois. Both associations also elected officers (Feedstuffs, Nov. 11, p. 1), and held business meetings.

Questions Orders

Mr. Oliver raised questions about marketing orders for the poultry industry and their possible future effects on the feed and hatchery business. "There is indication that the long-term disadvantages and problems connected with marketing orders will outweigh the advantages," he said.

"For an industry which exists in—and believes in—the free enterprise system, a major question regarding marketing orders is their competitive effect. If marketing orders are approved for turkeys, will this place marketing on a nation-wide basis under USDA? Will there be competitive cross-effects on broilers, livestock, etc.? What about the freedom of producers to go in and out of the industry?" These questions, and others, must be carefully considered, the grain and feed official said.

He continued, "Marketing orders are considered as a voluntary, self-help plan, but some observers believe the regulations become quite compulsory and could become a threat to the free enterprise system." Mr. Oliver described a marketing order as a supply-management device limiting the volume of a commodity that is marketed, and even its price, through control of quality, quantity and, possibly, maturity and size.

Mr. Oliver said that USDA has stated that a marketing agreement is voluntary and is binding only to those handlers who sign it; but, at the same time, if handlers don't accept an agreement that is approved by producers, the secretary of agriculture is authorized to issue an order anyway, and it is binding on all handlers of the commodity.

Mr. Oliver also reminded the group of the authority of Commodity Credit Corp. to sell feed grains at market price. "With the opportunity to sell up to $768 million, the CCC price makes the market price, depending upon how aggressively CCC wishes to enter the feed grain market on any day or any week," he said.

The association executive stressed the fear which, he said, has spread through the industry because grain merchandisers do not know from day to day or minute to minute how aggressively CCC will sell its stocks. "It creates a situation when rumors of CCC intentions have more influence on price than any other factor," he pointed out.

Mr. Oliver cited problems which the ability to sell feed grains at market price causes within the U.S. Department of Agriculture. "If CCC holds feed grain off the market and allows the price to rise, the government will have difficulty in obtaining compliance next year for grain sorghums and corn. If USDA sells aggressively to depress prices, they will place Secretary of Agriculture Orville Freeman in an impossible position. Producers who comply also have non-compliance corn to sell in addition to the non-compliers. If feed grain prices are down, caused by government's own action, the secretary of agriculture will become known throughout rural America as a punitive secretary who drove the farmers' prices downward."

Selling

In another speech, Ben Smith, general merchandise manager, Southwestern Bell Telephone Co., asked dealers, "If you don't know how to sell, how can you lead your salesmen?" He encouraged dealers to spend more time in actual sales contacts.

The overriding objective of any business must be economic service to customers. If a dealer fails to achieve this objective, he becomes a parasite in the economic community, declared Dr. Richard Phillips, professor of economics, Iowa State University, in an address.

Every member of the total management team, from owners to key employees, must be vitally concerned with the function of management. Each must be concerned with management planning, with organizing and direction and with evaluation and control, stressed Dr. Phillips.

Cattle Feeding

Kenneth Monfort, Greeley, Colo., commercial cattle feeder, in his speech, "Tomorrow's Cattle Business Today," predicted "extremely rapid" growth in demand for beef.

He asked, "What can you gentlemen in the feed business do to exploit this tremendous potential for both yourselves and your customers? To explore this fully, we much first look at what your customers' goals are—or should be," he said.

Mr. Monfort listed goals for both as, first, making a profit, and second, production of a premium product. On the objective of a premium product, Mr. Monfort said he does not necessarily mean production of prime beef since "most of us in the industry no longer consider prime beef as a premium product. Today's premium product is fairly light weight, high yielding, high grading, has a minimum quantity of fat and a maximum of red meat kind of beef." He said this type cattle can always be sold. The producer may not always make a profit, but, by producing this kind of cattle, his chance for profit is maximized. His chance for loss is small. His reputation as a top feeder is assured.

Mr. Monfort said the feed man must provide the cattle feeder with the following if he is going to supply him with his supplement feed:

1. Sufficient high quality protein. "If he feeds too much protein you are costing him money." Mr. Monfort aims for 11.5% crude protein in his rations.

2. Sufficient mineral with proper balance. "I believe that all of the trace minerals, calcium, phosphorus and even salt, should be force fed," he said. Here again, it is as much a fault to over feed as to under feed.

3. Every ration should include at least ½ lb. of dehydrated alfalfa, unless the feeder is feeding 3-4 lb. of good alfalfa hay ("and who today can even find any good alfalfa hay?").

4. Additives—Stilbestrol, he said, is a "must." Antibiotics Mr. Monfort listed as "probably good," reporting "mixed results" from their use. "Most other additives are not worth the cost," he said.

Mr. Monfort said his feedlot uses safflower, millfeed, malt product and meat scraps. Soybean meal would be more economical in the Illinois area, he pointed out.

Let Banks Finance

Financing, he said, is "no place for the feed man." He told the audience, "Your duty is to help with a good program and help sell it to the banks.

"Banks must realize feeding is a business, in fact, it soon will be the largest single business in the entire agribusiness field. It must be adequately financed. The best feeding areas must have three things—feed, weather and banks. They are of equal importance."

If a feeder can show his banker that he knows how to feed cattle efficiently, to buy reasonably priced feeder cattle and realizes that feeding is a business, not "crapshooting," he should have no trouble getting adequate financing, Mr. Monfort stated.

Mr. Monfort outlined a few changes that have occurred at his feedlot. The biggest single change has been in quality of feeder cattle, a change brought about by following fat cattle through the packing plant, he said. "We have come to the conclusion we

(Turn to GROWING, page 106)

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AFMA Comments on Antibiotic Labeling

CHICAGO—The American Feed Manufacturers Assn. this week commented on control officials' latest suggested policy on antibiotic declarations in the labeling of medicated feeds.

AFMA said that since the change was appearing late in the year, it would seem that control officials would not be insistent upon immediate adoption. However, it was suggested that feed manufacturers check with officials with whom they are registering feeds, and it was noted that the change should be considered in new printings of tags.

At the meeting of the Association of American Feed Control Officials in Washington, the association endorsed the following proposal by the medicated feed labeling committee: "A new policy in which the antibiotics will be expressed as 'grams per pound' in all products which are to be diluted before feeding and as 'grams per ton' in all products which are to be fed without further mixing with feed; the term 'milligrams per pound' will be permitted on the label only in those cases where a dosage is given as 'milligrams per day' in the feeding directions." (Feedstuffs, Nov. 4.)

AFMA said some feed manufacturers have expressed concern that the recommended policy on antibiotics would possibly result in confusion on the part of the feeder. They contend that the feeder is most familiar with "grams per ton" and may misinterpret "grams per pound." This would be particularly true if he used both complete and concentrate type feeds. These firms are planning to use both figures on their concentrate labels for the next year. For example—0.025 gram per pound or 50 grams per ton.

FDA Clears Nystatin In Turkey Feeds

WASHINGTON—The Food and Drug Administration has issued a food additive order clearing use of nystatin in turkey feed for prevention or treatment of crop mycosis and mycotic diarrhea in turkeys.

The action was taken in an order which amended a previous order clearing use of the drug in chicken feed.

CANADIAN PROBLEM, TOO

TORONTO—The U.S. isn't the only country with a problem of broiler over-production. Canada has a similar problem.

The Ontario Retail Feed Dealers Assn. said last week: ". . . Industry people are now fearful that normal governing influences are incapable of stemming this threatened production wave. In full realization of the seriousness of the situation with which the industry is faced, the Ontario Poultry Council has opened a full scale inquiry concerning factors that are contributing to this distressed state of affairs. Various segments of the council, including the retail feed section are being called upon to testify in this sweeping investigation. The inquiry is not called to uncover a scapegoat who can be charged with the responsibility for this chaotic condition but rather to devise ways and means whereby they may be effectively combatted."

Murray McPhail, secretary of the feed group and also secretary of the poultry council, said feed men as well as others were being invited to submit thoughts on the problem and possible solutions. A poultry council meeting will then be called to discuss the situation and formulate policy.

PROGRAM

(Continued from page 1)

the program, which would be a temporary one, simply by directing money away from the grain subsidy and soil bank programs into a program for converting grain to poultry and veal meats and shipping the meat abroad.

The scientist acknowledged that there would be various technological, economic, diplomatic and sociological problems, but he presented a case for the program and warned that "we should be very careful that we not do too little and do it too late."

In connection with the letter to Secretary Freeman, Dr. Scott commented: "Though I am not accustomed to writing letters to Washington, I had to write this one because I felt so strongly that those who are concerned with our agricultural policies and supports, etc., are entrenched with the idea that the way to act is to take care of each little segment of agriculture (wheat farmers or corn raisers, or hog raisers or turkey raisers) separately, without consideration of the over-all necessary synergism of all agriculture."

Dr. Scott's proposal would, of course, have an important effect on the feed industry as well as other phases of agriculture.

His proposal is developed in the letter to Secretary Freeman, as follows:

"As a professor of nutrition and member of the faculties of both the department of poultry husbandry and the graduate school of (human) nutrition at Cornell University, I may have a unique opportunity to acquire a viewpoint regarding the possible role of U.S. agriculture in relation to present world problems, both domestic and world-wide. I wish to enumerate several facts and observations and then attempt to present a proposal which may be worthy of consideration:

"The observations:

"(1) While in all of the underdeveloped countries, the people must eat the grains of the land, such as rice or corn, those countries with higher standards of living can afford to convert much of their grains into more acceptable animal protein foods. This, in turn, prevents nutritional deficiencies, promotes good health, ambition, etc., and makes for a still better standard of living. Thus, a high standard of living and consumption of animal protein foods go hand in hand.

"(2) It is essential to our economy that we do convert a good proportion of our grains into animal meats. Even with our high production of animal meats, we still have a tremendous surplus of grains.

"(3) One reason for this is that, through science, we have learned how to convert vegetable materials, such as corn and soybean meal into animal foods, such as broilers with very great efficiency.

"(4) Our government has tried to overcome our situation of over-production of food within our own borders by attempting to reduce the production of grains by paying farmers not to raise grain. Even in spite of this, we still have large excesses of grains.

"(5) We also have tried to take care of this by giving some of the grains to the under-developed countries. Since the grain is often foreign to that country (such as wheat to a rice-consuming country) and since they have no animals to which to feed it, the gift of grain is not very well appreciated.

"(6) Furthermore, giving grains helps no one in the U.S. because the grain growers can easily produce more.

"(7) Thus, we in the U.S.A. sit in the midst of much more than plenty of food and suffer because of it, while much of the rest of the world sits starving and listening to our fruitless attempts to control our own problems by reducing our food production—and they naturally envy us and hate us for our selfish attitude.

"(8) On the other side of the coin, the U.S. has participated in WHO, FAO, UNICEF, INCAP, etc., in an effort to help the underdeveloped countries to cure the worst nutritional disease known to man, 'kwashiorkor,' with local success in some areas. (Actually, Rockefeller and the Ford Foundation are doing more in this area than is the official U.S. government.)

"(9) The nutritionists with these organizations are doing a grand job with the limited funds available to them. At the Institute of Nutrition for Central America and Panama (INCAP) they have cured numerous children suffering from acute kwashiorkor by feeding them a vegetable protein mixture made up of cottonseed flour and other materials in a manner similar to a poultry mash. While this is a commendable emergency treatment for the present, it is unlikely to stimulate these countries to higher standards for their future generations and probably does not make the common people think any the better of 'the American Yankees.' Commercial interests in the U.S.A. and elsewhere are trying to get such things as 'fish flour' worked into this program. Fish flour, properly prepared, would probably be a good nutritional source of the needed amino acids, but it would not lend itself to being a highly acceptable permanent solution of the problem.

"The proposal:

"(1) Since all of the peoples of the world like and accept chicken meat, turkey meat, and veal and will really sacrifice to get these foods to eat as often as possible; (2) since these meats are high in the nutritious protein and vitamins needed to cure kwashiorkor and other nutritional diseases; (3) since we can produce broiler meat, turkeys and even veal at remarkable efficiency, can package the cooked, ready to eat meats in new plastics so they will keep at tropical temperatures; (4) since providing one to two billion broilers, parts of turkeys and pieces of veal to starving peoples would help our own economy by causing us to use up more of our surplus grains by converting them to meat; (5) since providing the peoples of these nations, directly, with highly acceptable food will make them feel better toward us and therefore, will help relieve world tensions; (6) since this will show that we really mean our 'Food for Peace' program; and (7) especially since we should be able to undertake the program by simply directing money away from the grain-subsidy and soil bank programs to this program and, therefore, it will cost nothing over that which we are spending now, it seems possible that we could undertake a world-wide gigantic program to furnish cooked, ready to eat broiler, turkey and veal meats to every nutritionally-starved person in the world, starting with those in the Western free world, but perhaps eventually even getting into some of those countries that have gone Communistic simply because they were starving and thought that they didn't have anything to lose by joining the Communists in view of the fact that their well-fed friends in the U.S. and Europe weren't interested in them.

"Of course, it would be necessary to tell these peoples that this is a temporary program, that we are interested at present in curing their nutritional diseases; that we will help them with technology if they wish to develop their own animal industry.

"Details of this program might require a little technological, diplomatic and sociological understanding and know-how. It is time we turned from developing bigger and bigger bombs to some of these other sciences, anyway. In a way, it would be the same as a large company giving out free samples in an effort to create more demand for their product.

"The world is so much smaller now that it can be compared with a single country of a couple of centuries ago. For example, the world as a whole may be compared to France before the French Revolution. When the people call, 'We want bread'—are we going to laugh and suffer the consequences or are we far-sighted enough to do something about it?

"Whatever we do in this direction should help our own economy at the same time. But, we should be very careful that we not do too little and do it too late."

BROILER ORDERS

(Continued from page 1)

secretaries of agriculture—Byron C. Allen and Dr. James T. Ralph.

The meeting was hailed as, "Opportunities available for self-help stabilization program under state and federal marketing orders." This title is certainly indicative of the subjects slated to be covered.

It is presumed the South Carolina meeting will be along the same lines, but perhaps not as elaborate. It is pointed out that this state has not had a state-wide meeting to discuss marketing orders, although a directors' meeting in Asheville earlier this fall decided against any form of controls.

As November rolls by, and December approaches, the broiler industry is beginning to realize that it must face the problems of whether to go for controls or not. Since Congress gathers right after the first of the year, those advocating marketing orders say now is the time for the broiler business to definitely make up its mind.

The fall broiler market isn't showing too much strength either. Limited demand for birds is being experienced from Delmarva southward as the holiday season approaches.

The Delmarva market opened this week at 12-12.4¢ and "lacked aggressiveness." Demand for live offerings was sluggish. In Georgia, at the opening of the week, demand was also rather poor, although the week opened with prices on farms at around 11¢, up 1¢ from last week at the same time. The market jumped 1¢ on Thursday after a rather dreary week.

The 11¢ price was also reported in North Carolina where supplies were adequate and demand only fair.

Opinions as to whether the broiler industry will swing toward marketing orders differ. One source, who has favored them from the beginning, this week said, on the basis of reports he has received from over the entire country, the Deep South would probably vote for marketing orders; the West and the Delmarva area would probably vote against marketing orders.

CCC

(Continued from page 1)

in volume, reflecting a big quantity of wet corn and delayed field work because of bad ground conditions for harvesting machinery, the impact of the big harvest is substantially reduced in volume, which has given some firmer tone in the open market price for corn.

The USDA policy price target for November corn sales is said to be 15¢ below the price support level of $1.20 bu. on a national average basis which is seen to discourage any opportunity of non-cooperators in the feed grain program to cash in on market price bulges.

Up to this time, USDA has been concentrating on sales of so-called going-out-of-condition corn which, it likely to occur. Consequently, CCC is believed, will be credited to the cost account of the feed grain program. Such sales recently have been heavy but evidently spotty in areas where corn price bulges have or were likely to occur. Consequently, CCC moved into its certificate pool accumulation where they have adequate and steady volume at the export outlets where demand is good to put a damper on corn market enthusiasm.

4 GRAMS!

that's the amount of zinc bacitracin (Baciferm) per ton of feed that increases broiler profits $6 to $22 per 1000 birds.

That's all. 4 grams. And broiler profits can increase $6.55 per 1000 birds to $22.58 per 1000 birds. That's what Baciferm zinc bacitracin antibiotic supplements do for you.

The proof? We have just completed calculations on the results of *six* recent tests conducted in different parts of the country involving over 14,000 birds! The summary below highlights the pertinent facts and figures. See for yourself why Baciferm makes such good business sense (and dollars) in *your* broiler feeds. These results confirm the data from scores of tests run during the past several years.

	NUMBER OF BIRDS	EXTRA PROFIT PER THOUSAND BIRDS OVER CONTROL (4 GRAMS ZINC BACITRACIN PER TON)
CSC TEST #23	524	$15.34
COLLEGE TEST #58	964	$13.95
COLLEGE TEST #60	300	$ 9.50
FEED MANUFACTURER'S TEST #78	12,000	$ 6.55
COLLEGE TEST #82	600	$21.85
COLLEGE TEST #83	150	$22.58

BASIS: market price of broilers 16¢ per lb.; feed cost 4½¢ per lb.; zinc bacitracin 7¢ per gram.

Doesn't it look like Baciferm is the buy for you? Baciferm's the buy for more and more feed manufacturers for both low and high level use. It's the economical antibiotic supplement for poultry and swine feeds. It contains the selectively-active antibiotic *zinc* bacitracin made exclusively by CSC under Patent No. 2,809,892. Baciferm's selective action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. College tests show that Baciferm gives full value in stimulating growth and reducing mortality. And – *zinc* bacitracin has the antibiotic stability manufacturers require.

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ANIMAL NUTRITION DEPARTMENT

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Turkey Provisions Outlined For Study Prior to Hearings

EDITOR'S NOTE: *The National Turkey Advisory Committee has prepared, with the help of the U.S. Department of Agriculture, proposed marketing orders and agreements for turkeys and turkey hatching eggs for consideration at six hearings, the first to be held Nov. 20-22 at Richmond, Va.*

Feedstuffs is reproducing details of these proposals so readers can be fully cognizant of their content before the hearings begin.

Appearing below are certain provisions of the proposed marketing agreement and order regulating the handling of turkeys. Comparable provisions for the proposed turkey hatching egg marketing order appeared in Feedstuffs Nov. 11, page 6.

Not included in either of these reprints from the Federal Register are provisions which concern establishment and membership of advisory boards and administrative committees. These sections were summarized in the Nov. 4 issue of Feedstuffs.

DEFINITIONS

§ T-1 Secretary — "Secretary" means the Secretary of Agriculture of the U.S. or any employee of the department to whom authority has heretofore been delegated, or to whom authority may hereafter be delegated, to act in his stead.

§ T-2 Act—"Act" means Public Act No. 10, 73rd Congress, as amended and as reenacted and amended by the Agricultural Marketing Agreement Act of 1937, as amended (Secs. 1-19, 48 Stat. 31, as amended; 7 U.S.C. 601-674).

§ T-3 Person—"Person" means an individual, partnership, corporation, association or any other business unit.

§ T-4 Production area — "Production area" means the 50 states of the U.S. and the District of Columbia.

§ T-5 Turkey—"Turkey" means fresh whole turkeys slaughtered within the production area for the production of meat.

§ T-6 Handling — "Handling" means the slaughtering of turkeys for the production of meat and the disposition, storing or further processing of turkeys resulting from such slaughter.

§ T-7 Handler—"Handler" is a person engaged in the handling of turkeys.

§ T-8 Producer—"Producer" means any person directly or indirectly engaged in the commercial production of turkeys and who (1) has a proprietary interest in the turkeys or (2) who in a proprietary capacity operates and controls the facilities for the production of turkeys and produces turkeys with such facilities. Provided, that for the purposes of this part, if two or more persons are producers with respect to the same turkeys their respective percentage shares in the turkeys for the purposes of this order shall be deemed to be an amount of turkeys equal to the total number of turkeys so produced divided by the number of persons who are producers thereof, unless a written contract between the parties relating to such production submitted to the Secretary or the committee provides for a different percentage distribution of interest.

§ T-9 Type or breed—"Type" or "breed" are synonymous and mean such classification of turkeys as the committee may recommend and the Secretary approve.

§ T-10 Board—"Board" means the Turkey Advisory Board . . .

§ T-11 Committee—"Committee" means the Turkey Committee . . .

§ T-12 Fiscal year—"Fiscal year" means the 12-month period beginning Oct. 1 of each year and ending on Sept. 30 of the following year, or such other period as may be recommended by the committee and approved by the Secretary.

§ T-13 Quantity — "Quantity" means the eviscerated (ready to cook) weight of turkeys, or the equivalent thereof as to any turkeys dressed for market not ready to cook.

MARKETING POLICY

§ T-45 Marketing policy—At least once each fiscal year the board shall prepare and submit to the Secretary through the committee a report setting forth its general marketing policy for such ensuing period or periods as it may deem appropriate. Notice of the board's marketing policy shall be given promptly by reasonable publicity to producers and handlers. The report shall include any recommendation it may make for regulatory action in such period or periods as well as data and information used by the board in formulating the marketing policy. In developing the marketing policy, the board shall give consideration to the following factors:

(a) The estimated quantity of turkeys held for handlers, for themselves and for the account of the committee, at the beginning of such period or periods.

(b) The probable availability of additional turkeys during such period or periods.

(c) The estimated quantity of turkeys which should be carried over as a desirable inventory into any succeeding period or periods.

(d) The number of turkey hatching eggs set for hatching or the number of poults placed in such period or periods as will reflect probable availability of turkeys in the period or periods for which regulation is proposed.

(e) The estimated market requirements for turkeys for the period or periods for which regulation may be proposed, including in such estimates as separate items probable trade demands for turkeys in the various available outlets for turkeys.

(f) Current prices being received for turkeys and the probable general level of prices to be received for turkeys by producers and handlers.

(g) The trend and level of consumer income and any other factors which may affect consumer demand for turkeys.

(h) Any other pertinent factors bearing on the marketing of such turkeys, including the estimated supply or demand for particular types of turkeys or special problems relating to particular districts or other regional areas within the production area, and

(i) the need for any regulations and recommendations with respect thereto dealing in any manner with any of the foregoing or with the authorities for regulation provided by this order.

Recommendations with respect to specific implementation of the general marketing policy recommended by the board shall be made by the committee from time to time, as circumstances warrant, and the committee's recommendation shall contain the data and information upon which it is based, together with the specific regulatory action recommended.

REGULATIONS

§ T-50 Issuance of regulations—The Secretary shall limit the handling of turkeys as authorized by this section whenever he finds from the recommendations and information submitted by the board or committee, or from other available information, that such regulation may tend to effectuate the declared policy of the act. Such regulations may:

(a) Limit the handling in specified outlets of particular grades, sizes, qualities or packs of any or all types of turkeys during a specified period or periods.

(b) Limit the handling of turkeys in specified outlets by establishing in terms of grade, size or quality, minimum standards of quality.

(c) Fix, or provide methods for fixing, pursuant to § 51 through § 59, free and surplus percentages applicable to the handling of all turkeys handled by handlers and for the pooling of surplus turkeys and the distribution of the proceeds of such pool.

(f) Limit the handling of turkeys differently for different types, for different districts or other regional areas, for different purposes, or any combination of the foregoing, for any period.

VOLUME REGULATION

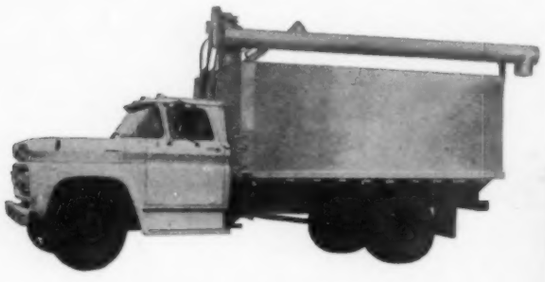
§ T-51 Desirable free quantity—If, on the basis of the board or committee recommendation or other information, the Secretary concurs in the likely need for volume regulation for turkeys for such period or periods as he may prescribe, he shall establish the desirable free quantity of turkeys which all handlers may freely use or dispose of in such period or periods.

§ T-52 Percentages—Whenever the committee concludes that the volume of turkeys to be handled in a marketing period, or periods, for which the Secretary has established a desirable free quantity of turkeys will exceed such desirable free quantity and that limiting the volume which handlers may freely use or dispose of in such period or periods through establishing free and surplus percentages applicable to all handlings of turkeys, or handlings of turkeys of any grade, size or quality, or any combination thereof may tend to effectuate the declared policy of the act; it shall make recommendations to the Secretary and the Secretary may establish free and surplus percentages applicable to such total handlings, or of any grade, size, or quality thereof, within such period or periods, which shall total 100% of the turkeys to which the percentages apply. If the Secretary determines that such percentages should be modified within any such period or periods, appropriate new percentages may be established, Provided, that any change in the applicable percentages may be applicable only to the remainder of the period.

§ T-53 Set aside—Whenever free and surplus percentages have been established for a period or periods by the Secretary, each handler shall set aside and withhold from marketing a quantity of turkeys computed by multiplying the quantity of all turkeys handled by him in such period by the applicable surplus percentage. The committee, with the approval of the Secretary, may prescribe the grade, size or quality of turkeys which shall be set aside to meet the surplus percentage and may require that such surplus percentage be set aside from each lot handled, Provided, that for purposes of this provision each day's slaughter of each person's turkeys or of the handler's own turkeys, shall be deemed a separate lot.

The turkeys handled by a handler which

(Turn to PROVISIONS, page 99)



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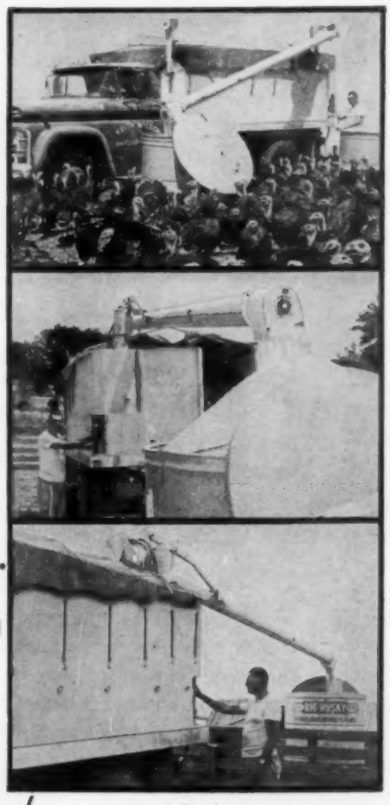

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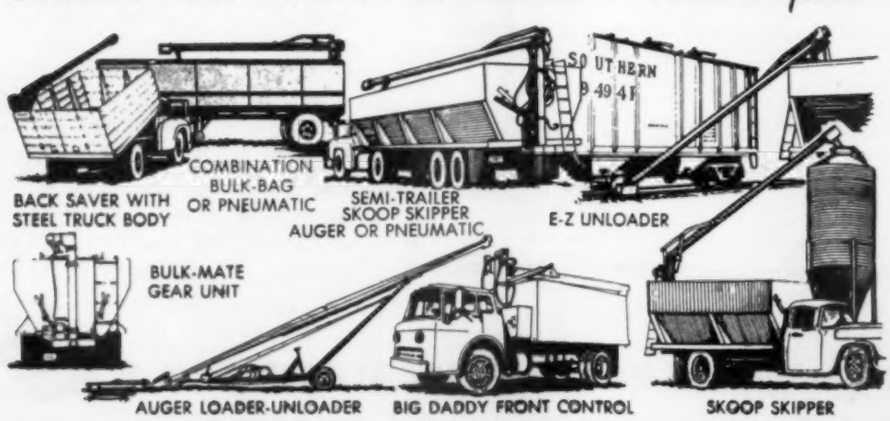

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TESTING LABORATORIES

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WE'RE SOLD ON SCOTCH O LASS

. . . Say Cattle Feeders Merrill and Woodrow Schlief

Read the successful results of this beef feeding operation

HERE'S THE SURPRISING FACT

The ration was a LOW COST, HIGH ROUGHAGE, ration well mixed with a 2½ % (50 lbs. to the ton) level of Scotch O Lass to make it palatable.

The Schlief Brothers report that Scotch O Lass not only made the ration extra palatable but also encouraged increased water consumption, and in turn, added feed intake. Feed conversion, they report, was excellent.

HERE'S THE GRAND FINALE! The entire lot of 214 head sold at top market prices ($25.10 that day).

WHAT'S THIS ADD UP TO? Simply this!

Scotch O Lass makes all rations, even low cost rations with a large quantity of roughage, REALLY PALATABLE!

Scotch O Lass helps get—keep—push livestock on feed. Scotch O Lass helps produce good, fast, steady gains when mixed into a sound feeding program.

Scotch O Lass is so easy to use—and as Schlief put it . . . "because it's DRY it's much easier on the equipment, easier to get a good mix and saves labor, factors especially important in cold winter months.

IF YOU SELL FEED TO A BEEF FEEDER—YOU SHOULD BE SELLING SCOTCH O LASS!

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IN DAIRY CATTLE Pneumonia, Mastitis*, Foot Rot.

IN BEEF CATTLE Shipping Fever, Foot Rot and Pneumonia.

Treatment of baby pigs with GALLIMYCIN Injectable gives them disease-fighting support during the period of early stresses. In fighting baby pig scours, practical farmers report excellent results using 1-cc for each 3 to 5 lb. baby pig.

Now, they're using GALLIMYCIN Injectable *first!* From feedlots come reports of excellent results with GALLIMYCIN Injectable in the treatment of shipping fever, pneumonia and foot rot... even in cases where nothing else worked!

If you're a feedman, a salesman or a dealer, you're interested in successful livestock operations. Here's a new, effective antibiotic that belongs in every livestock health program.

GALLIMYCIN Injectable is new, but proven! In the broiler industry, the effectiveness of GALLIMYCIN in the treatment of certain respiratory problems – especially chronic respiratory disease – is a by-word. GALLIMYCIN Injectable is a boon to commercial poultry operators. Every month, two to three *million* baby chicks are treated with GALLIMYCIN Injectable. Poultry growers follow through on this program for just one reason – it pays. It helps to protect their profits.

Now, GALLIMYCIN Injectable belongs to livestock producers, too. After two years of tests proving its value for beef cattle, dairy cattle, hogs and baby pigs, fast-acting GALLIMYCIN Injectable enters the field of livestock diseases.

GALLIMYCIN Injectable *is* fast – effective blood levels of erythromycin are achieved in just one hour. It's effective – just one dose daily is sufficient treatment. And it's safe, too – no serious side effects to worry about.

* Milk drawn during treatment and within 48 hours after the last GALLIMYCIN injection must not be used for human consumption.

GALLIMYCIN Injectable treats mastitis, pneumonia and foot rot in dairy cattle... treats the whole animal. Rapid absorption of the drug means that it goes to work within one hour after injection. Each 100-cc bottle contains enough antibiotic for up to 6 cow treatments.

110093-R

Hog men have used GALLIMYCIN Injectable on baby pigs in cases of scours, pneumonia and other respiratory diseases. Results have been excellent. GALLIMYCIN aids in the management of leptospirosis in sows at farrowing time. It helps hogs all through life in their battle against the tough "flu" complex, rhinitis and bronchitis.

Dairymen have had outstanding success with GALLIMYCIN Injectable in cases of mastitis, pneumonia and foot rot. In mastitis, they like the way GALLIMYCIN Injectable treats the cow as well as the quarter.

Cattlemen who have used GALLIMYCIN Injectable generally agree that it does much more than is claimed for it. Beef cattle afflicted with shipping fever have been returned to full feed within three days by a single low-level dose of GALLIMYCIN Injectable. In cases of foot rot, dramatic recoveries due to GALLIMYCIN Injectable have been reported. In one such instance, 13 Hereford steers afflicted with foot rot were treated with GALLIMYCIN Injectable. Within 24 hours, all but three were recovering. These three steers were again treated on the second day, and on the third day, one steer received a third treatment. All 13 steers quickly made complete recoveries.

Livestock men have called GALLIMYCIN the antibiotic of choice in fighting certain livestock diseases. Hog growers, cattlemen and dairymen among your customers will soon be insisting on GALLIMYCIN Injectable in their livestock-health programs.

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Letters to the Editor

FEATURE ON SOUTHEAST RESEARCH REQUESTED

Auburn, Ala.

To the Editor:

I reviewed the Oct. 21, 1961, issue of Feedstuffs with considerable interest. I was pleased that you cooperated with the Midwest Feed Manufacturers Assn. and featured the research activities of land-grant colleges and universities throughout the Midwest.

Since many of your members must operate in the Southeast, the thought immediately came to my mind as to whether or not you plan a similar issue devoted to the research of the Southeastern Experiment Stations. I am sure that my associates who are directors of other southeastern experiment stations would join me in saying that we would cooperate with you in the same manner that the midwestern experiment stations did.

I particularly appreciated your editorial entitled "The First 100 Years." Most of us who are experiment station directors are also deans of the colleges of agriculture and many have the additional responsibility of being directors of agricultural extension services. Therefore, as a dean and director, I was particularly interested in and appreciative of the portion of your editorial dealing with the challenges that schools of agriculture face in attracting more and better qualified students to supply the needs of agribusiness. I congratulate you on the statement which I quote: "The opportunity for making prospective agribusiness managers of the future more aware of the opportunities available through agricultural education could well be major objective of the centennial year." As you no doubt know, we have two national committees which are concerned with this particular problem and opportunity. One is sponsored by the American Association of Land-Grant Colleges and State Universities and is headed by Dean R. M. Kottman of Ohio State University. The other is sponsored by the Agricultural Research Institute and is headed by Vice President A. E. Darlow of Oklahoma State University. I am sure that both of these committees would appreciate the opportunity to cooperate with you and to supply information that you might wish to use.

Most of the schools of agriculture now have curricula particularly designed to provide training for people interested in agribusiness. Many of these are new curricula. Ours at Auburn is at least 25 years old, but has recently been updated to make it even more attractive to students and to prospective employers in the agribusiness field.

E. V. Smith
Dean and Director
Auburn University School of Agriculture and Experiment Stations

●

SAYS MAINE BIRDS PASSED 'BARRIER' FIRST

Orono, Maine

To the Editor:

Admittedly, a pen of eight birds in a recent feeding trial at the University of Georgia Experiment Station exceeded the 4 lb.-8 week broiler weight by a good margin (as reported in Oct. 28 issue of Feedstuffs). However, the 40 pens averaged 3.82 lb. at eight weeks.

I would like to point out the results of the 15th Maine Production and Broiler Test, fourth hatch, 1961, in which all birds (20 pens, 50 birds to a pen), averaged 4 lb. per bird at eight weeks. The heaviest pen (White Mountains crossed Cobb's White Rocks) averaged 4.49.

The point we like to make is that the "4 lb.-eight week barrier" has been broken before in tests involving a larger number of birds per pen as well as on a commercial ration available to broiler growers.

Excuse us for not being able to read this article without pointing out that the Maine Broiler Test has already broken the 4 lb.-eight week barrier.

Harry C. Whelden, Jr.
Poultry Specialist
University of Maine

3 Meetings Scheduled

ST. PAUL—A series of three area educational meetings for egg producers, at which a program centered around increasing returns from the laying flock by better production methods will be presented, has been scheduled for three Minnesota cities.

Sponsored by the poultry department, the extension service and the veterinary college of the University of Minnesota, sites and dates are: Rochester, Nov. 28, 4-H building; Madelia, Nov. 29, grade school lunchroom, and Willmar, Nov. 30, Bank of Willmar meeting room. All meetings begin at 1:30 p.m.

Following a welcome by the county agent of the local county, egg producers will hear four speeches, then will have a question and answer session with the speakers. Topics and speakers are: "The Place of Automation in Our Egg Industry," Dr. R. W. Berg, extension poultry specialist, University of Minnesota; "Advantages of Restricted Feeding," Dr. E. L. Johnson, head of the poultry department, University of Minnesota; "What Is Stress and How Can it Be Avoided?," Dr. R. E. Burger, poultry department, University of Minnesota, and "Causes and the Prevention of Chronic Losses from Diseases Such as Cholera, CRD and Others," Dr. B. S. Pomeroy, DVM, head of the division of veterinary bacteriology and public health, college of veterinary medicine, University of Minnesota.

STERLING Winter Salt-Selling Ideas

IT'S STERLING "HALITE" ICE-MELTING TIME AGAIN!

Halite is quicker...and saves your ticker
DON'T GET ICED-IN GET Halite
A little Halite under the wheels takes you a long-long way
STERLING Halite
Melts MORE Snow and Ice FASTER!

Make your feed store Winter Emergency HQ

Display bags of Sterling "Halite," the ice melter so many folks rely on for walks, drives, loading docks, doorways, paths and other key areas that have to be kept ice-free. And "Halite" is great for extra traction under car and truck wheels to "keep 'em rolling" all winter long. Comes in 100-lb., 50-lb., 25-lb. (with plastic carrying handles) and 10-lb. bags. Show 'em all—sell 'em all!

Wintertime is Sterling Blusalt Lik Time

For best health, cattle need extra salt—and a full measure of trace elements. Home-grown feeds and roughages simply don't provide enough—and the easiest way to make up the lack is to put a Sterling Lik holder with a 4-lb. Blusalt Lik by each stall. Display these Liks... put up a sign next to them... and don't forget bags of Blusalt for free-choice feeding and feed mixing—and Blusalt blocks for the loafing shed.

Every lick of STERLING BLUSALT puts a plus in your milk check
STERLING BLUSALT
TRACE MINERAL SALT
STERLING BLUSALT
STERLING BLUSALT

Here's some extra business for you!
Display the Liks right on Sterling's Lik holders. They're handy and made to last for many years. An extra profit item for you!

KEEP THAT WATER SOFTENER SALT MOVING!

Get your share of this ever-growing business. Display a sign and a pallet of Sterling Water Softener Salt... and you're the man for the steady, month-in, month-out profits that come from this easy, self-sustaining business. Get your share!

—Extra Profit Hints—

Ask your Sterling representatives for mailing pieces, promotional literature and ad mats specially prepared to help you make more profit this winter.

Work with your local county agricultural agent—vocational agriculture teacher—veterinarian. You can help them, and they can be extra salesmen to promote your feeds and feed programs.

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RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

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can deliver all 4

SUPERIOR COXY PROTECTION

EFFECTIVENESS AGAINST MIXED INFECTIONS

NO EVIDENCE OF COCCIDIAL RESISTANCE

TOP FEED EFFICIENCY AND WEIGHT GAINS

Ever since AMPROL moved out of the Merck research laboratories and into the field, the broiler industry has been watching the results carefully to measure the over-all efficacy of this unique coccidiostat.

Results of this experience... involving over a billion birds... prove that AMPROL is more than fulfilling its promise as the coccidiostat broiler growers have been waiting for!

With a chemical structure completely unlike that of any other coccidiostat, AMPROL literally "starves" coccidia to death by depriving them of the thiamine they need to live. It works effectively against important coccidial species... especially against the killer types, Eimeria tenella and E. necatrix. AMPROL gives unequalled performance against single or mixed infections. Furthermore, coccidia have not shown any resistance to AMPROL!

NEWS BULLETIN! AMPROL may now be fed to broilers right up to marketing... with no withdrawal! This means: • Coccidiosis protection with just **one** top coccidiostat and **one** feeding schedule... from day-old to slaughter • No juggling of feeding schedules—one less feed inventory to handle; one less delivery to be made

MERCK CHEMICAL DIVISION
MERCK & CO., INC., RAHWAY, N. J.

Doughboy to Expand Storage Capacity

NEW RICHMOND, WIS. — Plans for expansion of its storage facilities for formula feed ingredients and grain have been announced by the milling division of Doughboy Industries, Inc.

Ten silos will be constructed and when they are completed the storage capacity will be nearly doubled, according to Ray Wentzel, vice president of the division.

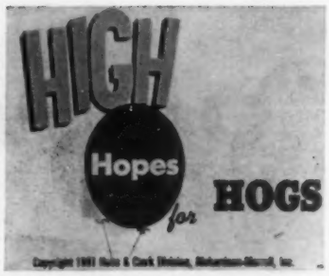
The silos, rising to a height of 90 ft., will be built in two rows of five each. They will go up north of the existing storage facilities and will be attached to those units, the announcement said.

Construction work has been started, and the project is in charge of the Hogenson Construction Co., Minneapolis.

Slide Film Points Up Good Hog Practices

ASHLAND, OHIO — Swine producers' "High Hopes for Hogs" is the subject of a new 14-minute color slide film produced by Hess & Clark, Ashland, Ohio, manufacturer of animal health and feed medication products.

The film points up the need for good management practices in hog raising, with emphasis on the basic elements of balanced feed for profitable gains, effective medication for better health and continuous sanitation for greater protection.



SLIDE FILM—"High Hopes for Hogs" is the title of a 14-minute color slide film produced by Hess & Clark for showing to interested groups and individuals. The film outlines good management practices in hog raising.

"The Hess & Clark line includes products for virtually every step in producing healthy hogs for market, from furazolidone (nf-180) in feed for the sow prior to farrowing and in fortified feed through the early growing period, to treatment and sanitation products," officials noted.

The message of the 14-minute film is considered to be of interest to distributors and dealers of animal health products, hog raisers and farm organizations interested in swine health and production. Interested individuals and groups who desire a showing by their local Hess & Clark sales representative should address requests to the Animal Health Products Manager, Hess & Clark, Ashland, Ohio.

Contaminants Subject For Nutrition Seminar

ST. PAUL—Contaminants will be the program theme for the Nov. 21 Twin City Nutrition Seminar.

Three speakers will be featured on the program to be held in Peters Hall on the St. Paul campus of the University of Minnesota, according to Don Swanson, secretary of the seminar group.

Speakers and their topics will be as follows: George Whelan, Minnesota Valley Dairy & Testing Laboratory, New Ulm, Minn., "Bacterial and Chemical Contaminants in Drinking Water"; Dr. Dale Sorenson, University of Minnesota veterinary clinic, "Effect of Various Contaminants on Livestock," and A. Harris Kenyon, director, Minneapolis district, Food and Drug Administration, Department of Health, Education and Welfare, "Pesticide Contamination of Forage Crops."

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SIOUX CENTER, IOWA

Help That Salesman

The Feed Man Must Work With His Outside Salesman, Have Him File Reports, Counsel Him, Check on Him and Encourage Him

By Al P. Nelson
Feedstuffs Special Writer

Undoubtedly the biggest labor turnover rate among feed mill employees is with outside salesmen, or field salesmen as some dealers call them. And, when a feed man has a high turnover rate on employees, this is costly business, for it means he must train a new man to replace the one who has left his employ. Also, he must be patient with the new man until he proves himself.

In a survey of feed men about this outside salesman problem, various reactions are obtained. "You can't get a good man unless you pay him a tremendous salary," one dealer said. "You can't supervise them. You don't know how much time they waste in the field," said another. "I just got a greenhorn pretty well trained, to the point where I was beginning to get back my investment, and then he jumps to a competitor at a bigger salary," wailed one dealer.

Thus it goes. Getting and keeping good salesmen is a problem. Why? Because selling is one of the most difficult and, yet, one of the most rewarding professions. Applicants for a selling job may be a dime a dozen, but the man who can really sell can command his own price.

The good salesman can virtually write his own salary ticket. A salary in this case means a weekly guarantee plus a commission base. A salesman is judged by the actual orders he brings in and the cash resulting therefrom.

Whose Fault?

Whose fault is it when a salesman fails to produce for a feed man?

Usually, dealers who have had experience say it is the fault of the feed man. If he interviews a salesman applicant carefully he'll know if the man can produce. Then he must work with him daily, make him file reports, counsel him, check on him and encourage him. Unless he does all these things the salesman may fail. Why? Because he needs help in his job, too—sometimes. Very few can operate without an occasional recognition or reprimand.

A good feed salesman must first of all:

(1) Be a self starter. He must have more ambition than any other employee in the feed mill. This ambition must be so strong that he is anxious to get to work, anxious to make calls, anxious to make sales—so he can earn more money.

(2) He must have energy. A sick salesman is not usually effective. The successful salesman must make calls in rain or snow, tramp through muddy farm yards or fields—all with one purpose in mind—to make sales and profit. Therefore, the good salesman must discipline and drive himself. If he can't do that, he'd better get a job in a different category.

(3) The salesman must have the incentive drive. Sometimes a big commission rate will give him this drive. The better his deal looks to him, the harder he will work in order to squeeze as many sales out of it as possible to increase his own personal take. The feed man, the interviewer was told, who hires a man to do outside selling on a straight salary with no commission is hurting himself.

How They Operate

Let us take a look at some of the views of feed men who have outside selling and see how they operate:

(1) Dealer 1. He sells farm hardware, appliances, seeds, fertilizer and some bagged feeds in a Wisconsin community. His outside salesman works on a salary and commission. His department, including home freezers, is detailed as to lines. The outside salesman gets 3% of the net profit of that department annually, plus the commissions he earns as salesman. Result—this salesman got $2,500 one year on the 3% profit basis. He works evenings and keeps his department looking spic and span. He even works on holidays and takes in most farm events and fairs. He feels he is in business for himself, and he really is.

"I tried a lot of selling plans before I thought this one up," the dealer told me. "But this one works. It doesn't hurt me to offer this fellow 3% profit on the entire department. I make more net on this basis than I did before when I offered no deal like this."

(2) Dealer 2. "I have one outside salesman on a salary and commission. Furthermore, I have all my employees on an annual bonus, dependent on the net profit. The outside salesman shares in this also. So, he always knows he's got more profit coming at the end of the year if he boosts his own sales. This is working out very well for us."

(3) Dealer 3. "I operate two mobile mills. I have two men on each mobile where I used to have one. With two men I find I get more territory covered in one day and more jobs ground, and the operator has more time to sell. He works on a salary and commission, and this commission actually is making a wonderful employee of him. Furthermore, one operator gives a small commission to his helper, and this makes that fellow more cooperative in handling jobs so that the operator can do more selling."

Drivers Do Selling

(4) Dealer 4. "Over 70% of my feed business is in bulk these days. I have two bulk truck drivers, and I have trained them in selling. I find that they can do most of my outside selling. I have some accounts I call on. I pay those truck drivers a commission on new customers, and they really keep their eyes open."

(5) Dealer 5. "Money really is an incentive to a good employee. I pay my outside salesman $10 for every good feeding record that I can use as a proof ad. This salesman is turning in some excellent ones. Not only is this making him a better salesman, but he is becoming more aware of costs. This makes him more val-

Stabilized Vitamins
report

Vitamin D and Zinc in Egg Shell Quality

• A ration containing 225 I.C.U. of vitamin D_3 and 3.75% calcium is recommended by the National Research Council. This may be low for a ration marginal in zinc, however, because zinc is needed for full activity of the enzyme carbonic anhydrase, which controls the conversion of calcium from the feed to the shell.

G. E. Bearse, Washington State University, FEEDSTUFFS, April 22, 1961

Drouth Induces Vitamin A Deficiency Problems

• Hay from drouth-stricken areas may be low in vitamin A, and this is especially important in dairy cattle eating generous amounts of hay. Cows fed this hay for long periods may have calves that are weak and blind. Beef cattle pastured on range low in vitamin A may develop shipping fever on arrival at the feedlot.

Prairie Farmer, May, 1956.

Hypercholesterolaemia Of Chickens Prevented By Ling-cod Liver Oil

• Ling-cod liver oil contains an unsaponifiable material which completely prevented the rise of serum cholesterol in chickens two weeks old fed a diet which caused greatly increased serum cholesterol alone or supplemented with herring oil or maize oil.

Fisheries Research Board of Canada Nature 185:473, 1960.

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uable to me. I am also saved time, for then I don't have to work on cost records for my ads. My salesman knows I won't pay $10 for every record, but he keeps turning in a lot of good ones hoping he can click with one every week or so. And he does. He's also more interested in selling feed now, for he makes a sizable commission in addition to a salary allowance, and with his knowledge of costs he can sell better than ever before."

(6) Dealer 6. "I employ a full time salesman on a salary and commission basis. I don't see how I could get along without this man. He makes from 6 to 8 calls per day and reaches many farmers in the trade area. If he can't sell a certain customer, he seeks my help. We go over the case in detail, so we know our method of attack. Then I go with him to see the customer and, many times, we can win him over. In such cases he does all the preliminary work, that I might not have time to do. Together, we often get the account. In addition, he brings in much business on his own.

"He also services poultry for farmers, checks hog and water feeders and is helpful in figuring out feed costs. The farmers like him, and I know I get more business because I have him. He gets a good salary, plus a commission. He seems satisfied. If he isn't and complains I'll sure raise him. I don't want to lose him."

(7) Dealer 7. "I'm in business in Minnesota, and I've got a good salesman. He receives a sizable salary, and he also gets 5% commission on our net profit annually. He does any sort of work we want him to do, such as clerking in the store on sale days or during other times, but he does spend much time on the road. He's the kind of fellow who likes to feel that he has an interest in the business and will work harder when this is the case. When I learned this, I worked out this arrangement, and his value to us has increased."

Project Partners

(8) Dealer 8. "I've gone into a separate contract arrangement with my outside salesman. He and I are partners in an egg production and marketing deal. We are also partners in a cattle raising project. This salesman handles these two projects for me and spends the rest of his time as outside salesman. The arrangement is working out very well, for he makes a profit on the two partnership projects and also gets a salary and commission on his selling for my feed firm. Incentive is what a salesman needs—perhaps more so than an average employee. Give the salesman a chance to increase his income and see what happens. That's what I did."

(9) Dealer 9. "I find that a part time outside salesman is better for us. The man I hired is a retired farmer who wants to work only half a day. So he and I have split up the accounts to be called on. He handles about 60%, and I handle 40%. Each of us takes turns in going with our supplier's resale man. In that way both of us get an opportunity to use this man's knowledge and skill in selling and can adapt his techniques to our own selling. The dealer who wants to go into an outside selling program can often do the job with a part time man, thus lessening the cost of the venture."

(10) Dealer 10. "I've got a pretty good sized mill operation, and I have two outside salesmen. They sell feed, fertilizer, seed and coal. I have a conference with these two men every morning, and we go over what they did the day before and plan what they are going to do today. I keep close tab on them and let them know I'm always willing to cooperate with them. They are on salary and commission.

"If they sell our brand of mixed feed they get 75¢ per ton. The first ton order of a new customer brings $1 and then drops to 75¢ per ton. Fertilizer and seed corn commissions range from 25 to 50¢ per ton and bushel, respectively. I furnish each salesman with a car and provide the gas. These men also probe corn and try to buy for me. They also act as collection men, and they get the money. Our territory in which they operate has about a 25 mile radius. I don't see how I could operate without these salesmen."

In summing up, it seems as if all these feed men agree that one should not hire a salesman unless he has been carefully selected and trained and until a pay incentive system has been worked out for him. Then cooperate with him and help him, and the chances are you'll get more business.

"Get out and beat and bushes if you want extra business," is an old business saying. It is just as true today as it was 25 years ago.

To Make Blocks

SIOUX CITY, IOWA—Custom Products, Inc., has established a protein block producing plant here, it was announced by the Industrial Development Council of Sioux City. The firm will manufacture the feed supplement for cattle. Robert Chilton is president and general manager.

PILLSBURY JOINS GROUP

CHICAGO—Another firm which is engaged in the manufacture of feeds, The Pillsbury Co., has joined the National Food Conference Assn., Inc., it has been announced by Charles B. Shuman, president. The association promotes the nation's food production industry through the Farm-to-Table Program and the Youthpower Project.

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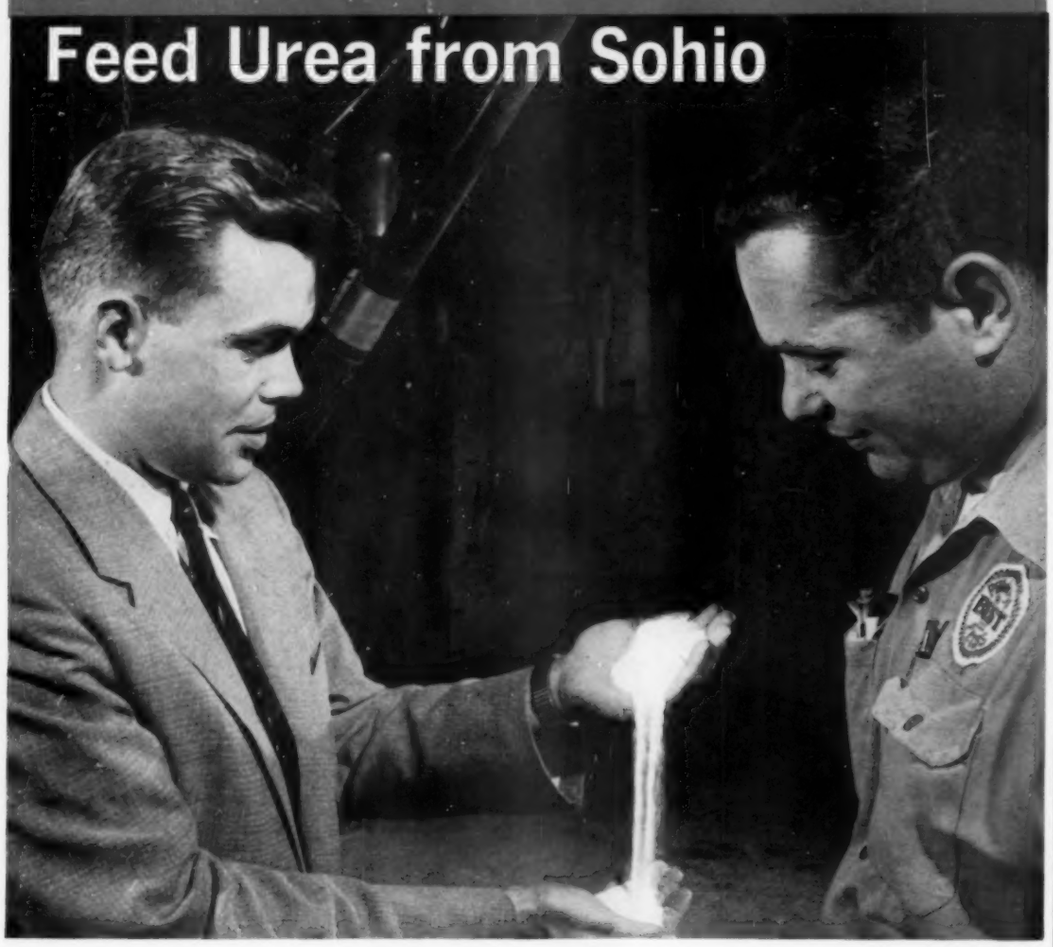

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Agriculture Changes Illustrate Challenges To Sales Managers of Feed Firms

CHICAGO — Changes in animal agriculture present certain challenges to sales and marketing management in the feed industry, and some of the changes were spelled out recently to illustrate the challenges.

Pointing out the changes and commenting on them was Dean McNeal, executive vice president of The Pillsbury Co. and chairman of the board of directors of the American Feed Manufacturers Assn. He was speaking at the annual marketing seminar sponsored by the AFMA's Sales Executives Council. (Also see earlier story on Mr. McNeal's keynote talk in the Sept. 23 issue of Feedstuffs.)

Trends brought out by Mr. McNeal included regional changes in animal agriculture; bigger animal production units; integration; lower returns per dollar of feed cost.

Each of the trends, Mr. McNeal noted, offers great opportunities for some and serious problems for all. "I believe," he added, "they all offer opportunities to those who believe in the importance of our basic industry and who plan for the future in terms of these changing conditions."

At the same time, he noted that, after one studies all of the various changes in agriculture, he must conclude that the basic challenge to the industry today is no different from what it has been through the years. The speed of the changes merely increases the urgency and importance of studying the trends and moving quickly to take advantage of them.

To illustrate changes and the challenges they may present to sales management, Mr. McNeal made these points:

GEOGRAPHICAL SHIFTS—In recent years, there has been a number of rather important geographical shifts in the production of some classes of livestock and poultry in the U.S. The following table illustrates this changing pattern:

PRODUCTION TRENDS—LIVESTOCK AND POULTRY

Per cent 1959 is of 1940

	Milk Cows	Layers	Turkeys	Hogs
East Coast ...	103%	115%	356%	137%
Central	79%	75%	228%	130%
California	137%	198%	382%	58%

What are the significances of these changes to your business? At first glance, feed management might say facilities and manpower should be shifted toward the East and West Coasts. And such an answer might be totally wrong for your company. A progressive sales and marketing management will further study all of the facts associated with this trend and then will carefully develop a total plan of action.

In this particular instance, further study of all the facts will indicate that despite these trends, the Midwest is still a most important center of production for all classes of livestock and poultry.

Further study will also bring out the fact that some classes of livestock and poultry—for example, turkeys and hogs—are actually showing very substantial increases in the Midwest. Progressive sales managements in the Midwest will see that their companies are geared to take advantage of these trends.

If the study is carried even further, it will probably be determined that shifts within an area are more important to you and your plans for a profitable future than are these inter-regional shifts.

The important point that we have attempted to bring out here is that sales and marketing management must go behind obvious facts and determine what opportunities and problems these and other facts may present to an individual company. They must then make plans to fit the opportunities offered by the trend to their company's current situation.

BIGGER CUSTOMERS — As mechanical and other scientific advancements have influenced animal agriculture, productivity per man has increased and has permitted the average feeder to handle an increasing number of units. This has resulted in the size of the average feed customer becoming increasingly bigger as is shown in the following table:

LIVESTOCK PRODUCTION PER FARM

	1939	1954	% 1954 is of 1939
Hogs and pigs ..	26.7	40.3	151%
Chickens	119.0	940.0	790%
Cattle	9.4	13.3	141%
Turkeys	72.0	370.0	514%

Again, what are the specific opportunities or problems presented to your company by this particular trend? A few sales managements may see all the disadvantages in this trend such as the problems of dealing with bigger and better informed buyers who are harder to sell. They will quickly jump to the conclusion that this type of customer will soon start making his own feed and will cross him from their lists of potential customers.

On the other hand, the sales managements who will guide their companies to an increasingly bigger share of a bigger total market will see in this new type of customer a greater sales opportunity. They will study his needs and determine what economic good he will need. They will see that a product is developed and backed by the right services to satisfy these needs. And they will make sure that they provide the type of salesman and sales program which

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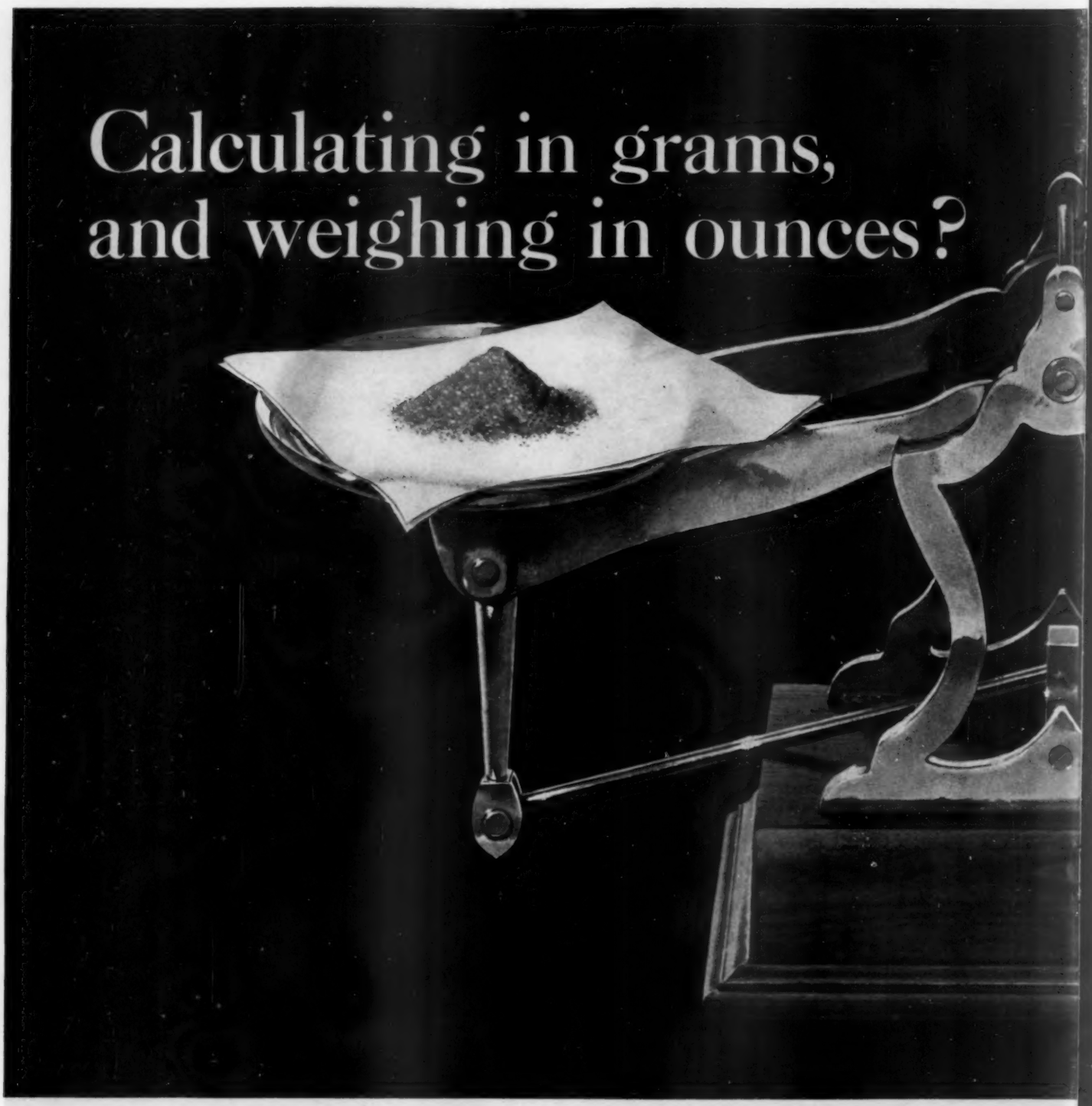

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For the first time, a vitamin A pre-mix with an even 12,000,000 units per pound

Eliminates the confusion and wastage caused by calculating the animal's needs in units, the feed formula in grams, and weighing the feed ingredients in ounces

Are you one of the many feed manufacturers eager to have all feedstuffs measured in pounds rather than in bushels? Then, you'll appreciate the service Pfizer has done in making a vitamin A pre-mix measured in *units per pound* rather than units per gram.

New Vitamin A-26.4 with its even 12,000,000 units per pound puts an end to the tiresome and costly extra calculating time spent multiplying or dividing by such numbers as 454, 28.4 and 13,620,000. Because you know exactly how many units you are mixing into a ton of feed, you can eliminate wastage caused by calculating in grams, rounding out the figure, and weighing in ounces.

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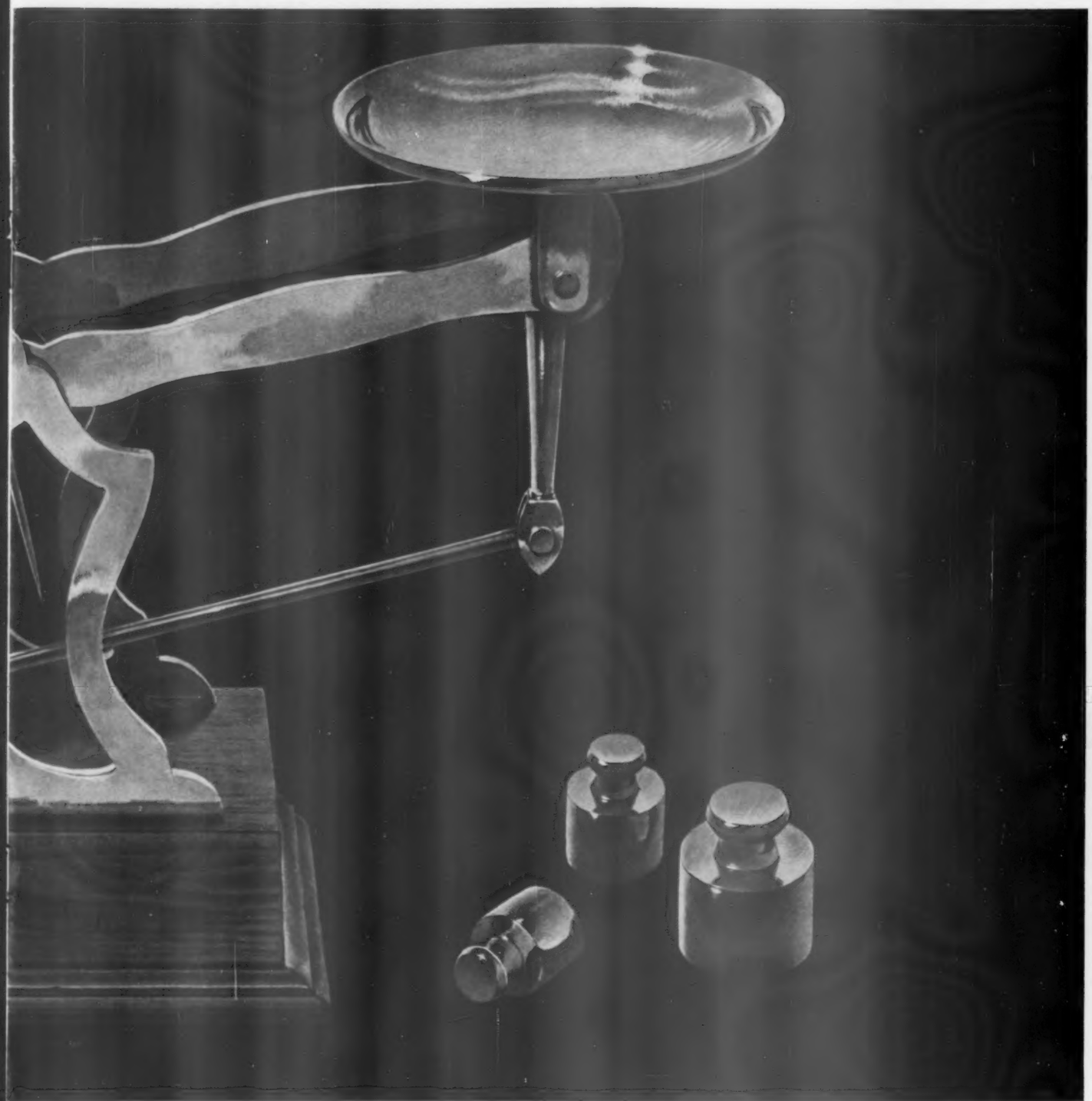

new Vitamin A-26.4

3,000 units of vitamin A per pound of ration, it will take 6,000,000 units per ton . . . or exactly *one-half pound of the new A-26.4* . . . as opposed to 0.441 lb. of an A-30, for example.

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will have the greatest appeal for such a businessman-customer.

INTEGRATION—Probably no word has been discussed more widely in our industry in recent years than the word "integration." Certainly, the trend toward integrated operations has been an important factor in some segments of animal agriculture. Here again I wonder if we haven't tended to let our emotions outrun our good judgments in appraising this trend. Haven't we, perhaps, assumed that all classes of livestock and poultry are being integrated at the same rapid pace? Have we assumed that this trend is occurring at an equal speed in all areas of the country?

The following table brings out the fallacy of any such conclusion:

APPROXIMATE PER CENT OF TOTAL PRODUCTION INTEGRATED TO SOME DEGREE (July, 1958)

Dairy	30%
Commercial broilers	95%
Turkeys	50%
Eggs	5%
Hogs	2%
Cattle	15%

You have seen certain sales managements jump to the conclusion that total integration is the only solution for the future of their businesses. Such men devote valuable selling time in trying to figure out big bonanza-type deals. Worse, they instill an attitude into the minds of their salesmen that kills sales initiative.

The more careful planner will recognize that there are possible limited opportunities through integrated operations in certain areas and in certain classes of livestock. He will continue to realize that his biggest opportunities must be in selling quality feeds to individual feeders and in helping those feeders to have profitable businesses.

RETURNS ON FEED COST—Another trend which causes all of us real concern is the trend toward lower returns to feeders per dollar of feed cost. The following table shows how these trends have developed over recent years:

GROSS RETURNS PER DOLLAR OF FEED COST

	Eggs	Broilers	Turkeys
1951	$1.70	$1.52	$1.97
1953	1.76	1.58	1.83
1955	1.54	1.68	1.77
1957	1.47	1.38	1.42
1959	1.38	1.12	1.42

What is the challenge to sales management in this situation? Isn't the challenge to recognize the fact that we are selling an industrial-type or cost-of-production product to a customer who finds himself in an ever more competitive market for his end products? Isn't the answer again in top quality, adequate service and worthwhile management aids to the feeder? This trend toward lower conversions is typical of most industries. It calls for changed action. It does not call for discouragement or an attitude of defeat. It indicates that a customer has a growing need to be filled and such a situation always offers a sales opportunity.

These are only four of the fast-moving trends that are affecting our industry today. They are used merely to illustrate the types of challenges that sales and marketing management must meet.

Rapid Illinois Feed Industry Growth Cited

LELAND, ILL.—"You are part of a rapidly expanding industry—feed production and consumption in Illinois are growing at a faster rate than the national average," 34 north central Illinois feed men were told here.

The speaker was Dr. R. J. Mutti, professor of agricultural marketing, University of Illinois, and his audience was made up of 34 north central Illinois feed industry leaders. These members of the industry met here for the first of six sessions to discuss the economic considerations in marketing commercial feeds.

This series of lectures and group discussions is the first of its kind held in Illinois, according to the sponsor, the University of Illinois Extension Service.

The six two-hour sessions have been developed primarily for local feed manufacturers and mixers in the area, the extension service said. The program was developed with encouragement from members of the Illinois Feed Assn. All sessions are being held in a new community hall built by Bakers, Inc., feed manufacturing firm, in conjunction with its new office bulding.

In this program designed to take the university to local areas, the feed dealers in future sessions will hear discussions on diminishing returns in livestock feeding, the economics of combining different value ingredients, principles of pricing and using business records to determine efficiency.

for you when you stock Shellbuilder." Here's why: Shellbuilder moves fast. It's in and out of your place in a hurry to give you fast, better inventory turnover. And clean, pure Shellbuilder is best for your customers' flocks, too. So, order a carload today and check the profit. Yours and your customers!

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Percent of Vitamin A remaining after 3 months	98.6	97.8	95.4	98.6	95.6	95.4

COMPLETE AVAILABILITY: Biological tests prove Dawe's FIXTAY is fully available to the animal for early absorption in the digestive tract.

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TABLE 1

Classification by Tons of Feed Sold	No. of Companies	Total Tons Feed Sold by Companies in Groups	% of Total Companies in Group	% of Total Feed Sold by Companies in Group
"None" reports	147	.....	11.81	....
Exempt tonnage	103	1,103,389	8.29	38.10
0- 50	260	6,950	20.92	.24
51- 100	147	10,714	11.83	.37
101- 200	150	21,428	12.07	.74
201- 300	75	18,888	6.03	.65
301- 400	52	18,243	4.18	.63
401- 500	29	12,480	2.33	.43
501- 600	34	18,532	2.74	.64
601- 700	22	14,189	1.77	.49
701- 800	17	12,610	1.37	.44
801- 900	15	12,676	1.21	.44
901- 1,000	13	12,451	1.05	.43
1,001- 2,000	68	94,689	5.47	3.27
2,001- 3,000	36	90,056	2.90	3.11
3,000- 4,000	15	52,122	1.21	1.80
4,001- 5,000	11	48,358	.88	1.67
5,001- 6,000	6	34,169	.48	1.18
6,001-10,000	14	110,905	1.13	3.83
10,001-20,000	14	214,281	1.13	7.40
20,001-50,000	11	319,394	.88	11.08
Over 50,000	4	669,194	.32	23.11
Totals	1,243	2,895,689*	100.00	100.00

*Total represents tonnage of all feeds sold including exchanges between manufacturers making the feed "tonnage fee exempt."

Feed Distribution In Missouri Up 8.5%

JEFFERSON CITY, MO. — The total tons of feed distributed in Missouri for the 1960 calendar year amounted to 2,895,689 tons, an 8.5% rise over the previous year, according to William L. Wyss, director of the feed and seed division of the Missouri Department of Agriculture.

Of the total, 1,103,389 tons represented exchanges between manufacturers. Tons not exchanged between manufacturers total 1,792,300, compared to 1,679,093 in 1959, an increase of 6.7%.

Straight products increased 11.95%, while mixed feeds increased 5.19%. Total mixed feed was 1,403,655 tons, 48.46% of the total.

Total straight products were 1,492,034 tons, 51.54% of the total.

Mr. Wyss noted that many classes of feed decreased while others increased. As in previous years, he also reported, most of the feed tonnage was distributed by a few companies (table 1).

TABLE 2

Classes of feed	No. of tons	% of total tons	% Chge. in 1960 over 1959
Mixed Feeds—			
Chick starter & grower	85,482	2.95	25.13+
Layer & breeder	164,663	5.69	9.62—
Broiler	113,280	3.91	17.13—
Other poultry	140,666	4.86	12.10+
Dairy cattle	350,486	12.10	15.73+
Beef & cow	101,344	3.50	13.16+
Swine	319,532	11.03	3.14—
Sheep	2,360	.08	8.46+
Calf	29,747	1.03	169.77+
Pet foods	36,856	1.27	23.87+
Mixed grains	4,685	.16	19.17—
Mineral feeds	26,935	.93	8.80—
Other mixed feed.	27,619	.95	30.44+
Total mixed feed	1,403,655	48.46	5.19+
Straight Products			
Alfalfa products	87,674	3.03	11.34—
Animal products	91,076	3.16	32.37+
Brewers & dist. products	13,549	.47	6.85+
Corn products	100,824	3.48	14.58—
Cottonseed products	145,073	5.01	39.71+
Linseed & peanut products	10,061	.35	77.72+
Marine products	11,512	.40	13.29—
Milk products	8,829	.30	6.51+
Molasses	144,577	4.99	26.90+
Oat products	17,803	.61	25.54—
Barley products	723	.02	18.33+
Rye products	20	Trace	....
Rice products	14,680	.51	374.62+
Wheat products	459,012	15.85	16.95+
Soybean products	259,031	8.95	12.11+
Sorgh. products	1,324	.05	96.31—
Screenings	7,712	.27	22.37—
Misc. products	118,554	4.09	28.34+
Total straight products	1,492,034	51.54	11.95+
Grand total tons of feed sold	2,895,689	100.00	8.57+

All figures represent tonnage of all feeds sold including exchanges between manufacturers, whereby the feed is "tonnage fee exempt."

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ELECTED—Officers of the Virginia State Poultry Federation, elected at the 31st annual convention in Richmond are, left to right, James Kelly, Harrisonburg, secretary-treasurer; W. D. Moore, Jr., Richmond, president, and W. Sterling Carter, Charlottesville, vice president.

Virginia Poultry Federation Elects

RICHMOND, VA.—W. D. Moore, Jr., Southern States Cooperative, Richmond, was named president of the Virginia State Poultry Federation at the organization's annual convention. He succeeds George Heitz, Broadway, who will be a member of the federation's executive committee.

W. Sterling Carter, Charlottesville, was elected vice president and James Kelly, Harrisonburg, was elected secretary-treasurer.

Elected to the board of directors were: E. C. Compton, Stanardsville; W. H. Derr, Richmond; C. J. Miller, Suffolk; Leonard W. Estep, Broadway; Frank Oliver, Roanoke; Franklin Hurst, Dayton; Henry L. Holler, Edinburg; John D. Shaffer, Woodstock; Preston Moyers, Broadway; Donald J. Baker, Moorefield, W.Va.; George Bryan, Harrisonburg; Dr. C. E. Howes, Blacksburg; Hollis Shomo, Richmond; Chas. W. Wampler, Sr., Harrisonburg; J. H. Meek, Mine Run; Ernest E. Smith and Harold Shiflet, Harrisonburg.

Broilers Consume 20% of U.S. Feed

RICHMOND, VA.—"Broiler chickens eat 20% of the manufactured feed in the U.S. and have become a billion dollar industry," Virginia broiler producers were told at their special group meeting during the Virginia State Poultry Federation convention in Richmond.

Dr. J. M. Snyder, director of research, the Beacon Milling Co., Cayuga, N.Y., speaking on a panel, pointed out that someone can and will make money on chickens in the future because they are such a good food. He said there is more room left to step up efficiency of chicken production than there is for other meats.

J. Frank Gordy, executive secretary, Delmarva Poultry Industries, Inc., Georgetown, Del., another member the panel, said that foreign sales of U.S. poultry meat last year reached a new high of 176 million lb. and this year the volume is expected to exceed 200 million lb. Figures for January through July, 1961 show total U.S. poultry meat exports are 51% ahead of the comparable period of 1960.

Along with this increased tonnage has come some increase in the geographic area receiving the product, with poultry meat being shipped to about 60 countries last year compared to 40 in 1957, Mr. Gordy said.

"However, we must look upon our export markets as a regular outlet and not as an avenue to move burdensome supplies. We must produce for this market—not at it. Produce the size, the color and the quality that will most nearly satisfy their (export) specifications. The product we ship them cannot be a by-product of our production," he said.

Rising Cattle Prices To Stay Under '60-'61

URBANA, ILL. — It appears unlikely that prices for fed cattle will be as high this fall as they were last fall, but, if the nation's business climate continues to improve, they can be expected to work upward for several months.

This is the immediate outlook for fat cattle prices from L. H. Simerl, University of Illinois agricultural economist, who also observes that even though pork, turkey ad broiler meat competition is expected to ease off after the holiday season, "it seems dangerous to bet that prices for choice steers will go as high as the $27.42 average posted last January." He says beef may get 5-10% more competition from pork this fall than it did last year.

NEW MEAT MARBLING TECHNIQUE DEMONSTRATED

UNIVERSITY PARK, N.M.—A new technique for artificially marbling meat was demonstrated at a meeting of sheep breeding scientists from colleges in 12 western states, at New Mexico State University.

The technique, which involves the simple injection of a mixture of liquid beef tallow and corn oil directly into the steak or roast, was demonstrated by Dale Zinn and Henry Elliot of Texas Technological College, Lubbock.

The injection is said to produce a steak or a roast with a natural marbling effect in a matter of seconds. Tenderness tests made by the researchers indicate that the artificial marbling offers good possibilities for improvement of beef and lamb at the consumer level. Besides producing the marbling effect by injection, the researchers also claim that any type of flavor could be injected into the meat, and many low-grade cuts could be upgraded.

In order to achieve the desired marbling through feeding of the animal, "much excess fat cover" is produced, scientists said. By use of the new technique, specialists can produce a well-marbled steak or roast without waste fat, yet having the desired fat streaking in the lean, according to the researchers.

Research will be continued on the new injection technique, and it is planned to explore other possibilities for improvement of beef and lamb at the consumer level.

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Third . . . Myers-Sherman equipment is heavy duty, commercial equipment designed for long life under industrial operating conditions. Less maintenance, downtime and replacement costs in the future result in greater operating profits for you.

You'll find all the details, along with many other things you'll want to know, in our booklet, "Let's Build A New Kind of Feed Mill." We'll be glad to send you a free copy.

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WEANING TIME STRESS FEEDS BOOST PROFITS FOR PRODUCERS AND YOU

Feed manufacturers, emphasizing importance of stress feeding and offering formula feeds containing Aureomycin to meet the need, build volume on all hog feed sales

Vaccination, weaning, worming and handling *needn't* set pigs back, reduce weight gains and lead to outbreaks of enteritis.

And *won't*. Not if these operations are spaced out and pigs get the right kind of feed before and after weaning.

This means stress feeding—use of good formula feeds containing 50 to 100 grams of AUREOMYCIN® per ton.

What manufacturers recommend

Many feed manufacturers are strongly recommending increased use of stress feeds. Here's what they do:

First, they offer a complete starter feed containing 100 grams of AUREOMYCIN per ton as an integral part of their hog feeding programs. This starter feed is fed for at least a week past weaning.

Second, they invite new customers by offering a special conditioner feed containing 50 to 100 grams of AUREOMYCIN per ton to be fed during the critical period. Outstanding results from this conditioner feed persuade producers to go on the manufacturer's complete hog feeding program—and this leads to increased sales volume.

Aureomycin maintains weight gains

The excellent results obtained by feeding AUREOMYCIN through the stresses of weaning and vaccination are clearly shown in the chart on the opposite page. Observations on the vigor, appetite and temperature response of pigs on AUREOMYCIN indicated less reaction to vaccination than was evident in pigs receiving no AUREOMYCIN. Note that pigs fed AUREOMYCIN over the 44-day period averaged approximately 23 pounds more than those not fed AUREOMYCIN.

If you do not at present recommend the use of a starter containing 100 grams of AUREOMYCIN or a conditioner feed containing 50 to 100 grams of AUREOMYCIN, plan to do so. Boost gains and profits for producers and yourself. American Cyanamid Company, Agricultural Division, Princeton, N. J. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow directions for use.

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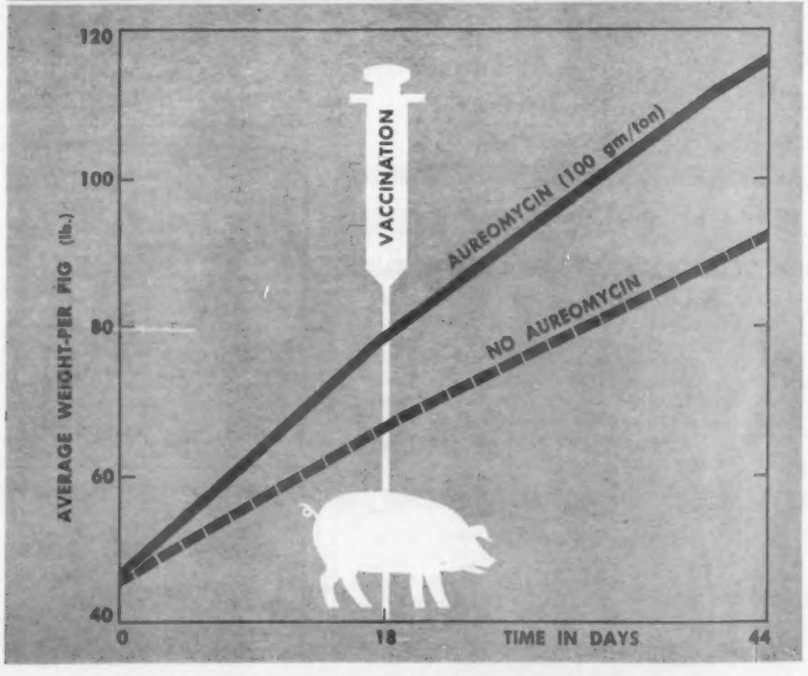
Vaccinating against hog cholera with ROVAC® Hog Cholera Vaccine is an essential step in the Cyanamid Coordinated Feed-Health Program for hogs.

Vaccination against hog cholera always causes an unseen reaction in pigs. The number of white blood cells drops sharply. As far as scientists know at present, this is a necessary part of immunization.

Vaccinated pigs are very susceptible to other infections for a week or so, perhaps because of this white blood cell drop. Pigs on a stress feed containing AUREOMYCIN are protected during this period when their resistance is down. AUREOMYCIN keeps out bacterial infections and increases weight gains. It does not interfere with the production of immunity.



The chart above shows the effect of feeding AUREOMYCIN on the gains of pigs through the stresses of weaning and vaccination. The pigs were 6 to 12 weeks old at the start of the experiment (0 day) and were vaccinated with ROVAC for hog cholera 18 days later. Pigs fed AUREOMYCIN throughout the critical period had less vaccination reaction and gained approximately 23 pounds more. (Based on a study at Ohio Agricultural Experiment Station.)

Cure, Prevention of Dairy Cattle Itch and Hair Slicking With Zinc

By Seppo Haaranen and Kalervo Hyppola
Finland

It was shown earlier by the authors (Feedstuffs, June 3, 1961) that the itch and hair slicking of dairy cattle appearing in Finland, especially late in winter, can be cured and prevented with the addition of zinc to the ration. This disturbing condition has been cured in one or two weeks by giving affected cows 300-500 mg. of zinc per day per 1,000 lb. live weight. It has been noted in examinations that the itch completely disappeared in herds after the feeding of zinc-enriched mineral mixes was started. The disease has been prevented by feeding 100 mg. of zinc per day per 1,000 lb. live weight.

The chloride, sulphate and oxide forms of zinc were found to be effective in arresting or preventing the condition.

Research Findings

The following findings resulted from investigations which covered 3,121 milk cows in 426 herds during March and April of this year:

1. The appearance of itch and hair slicking is clearly a regional problem. In the inner parts of Finland as many as 26.4% of the cows suffered from the irritating condition, while in coastal areas only 7.7% were affected. The investigation also made it apparent that the incidence of the condition is related to the mineral content of the earth on which the cattle are grown.

2. Of the cows that had no itch, 57.9 ± 0.94% had their latest estrus in time and the first insemination resulted in pregnancy. The corresponding figure for cows having suffered from itch was only 43.4 ± 2.68%. The difference between these percentages —14.5 ± 2.84—points out that the itch has a strong weakening effect on pregnancy. This was principally due to the weakening or non-appearance of the estrus. Of the non-itching cows, 4.1 ± 0.18% did not have their estrus in time, but for the itching cows the corresponding figure was 12.9 ± 1.8%, or 3.1 times greater.

The number of abnormal conditions and diseases recorded for each 100 itching and non-itching cows during a year were as follows:

	Itching cows	Non-itching cows
Cystous degenerations in ovary	11.5 ± 1.71	8.6 ± 0.53
Uterine inflammation	4.9 ± 1.16	2.2 ± 0.28
Retention of afterbirth	12.4 ± 1.77	8.8 ± 0.54
Abortus	2.0 ± 0.75	1.4 ± 0.22
Milk fever	9.2 ± 1.56	7.2 ± 0.49
Ketosis	9.7 ± 1.59	8.2 ± 0.56

The sum of all the diseases mentioned in the table above is 13.3 ± 2.81 greater for the itching cows than for the non-itching cows. This shows statistically that the itch is combined with a general disturbance.

Milk Production

Milk production during the test period (including non-milking cows) was 10.9 kg. daily from the itching cows and 12.3 kg. daily from the non-itching cows. Milk production of the itching cows was, consequently, 11.4% smaller than that of the non-itching cows.

Over an entire year, the difference in production was 2.6%. The smaller percentage of difference in the year-long comparison was principally due to establishing the shorter test period during a time of the year when the itch was most serious.

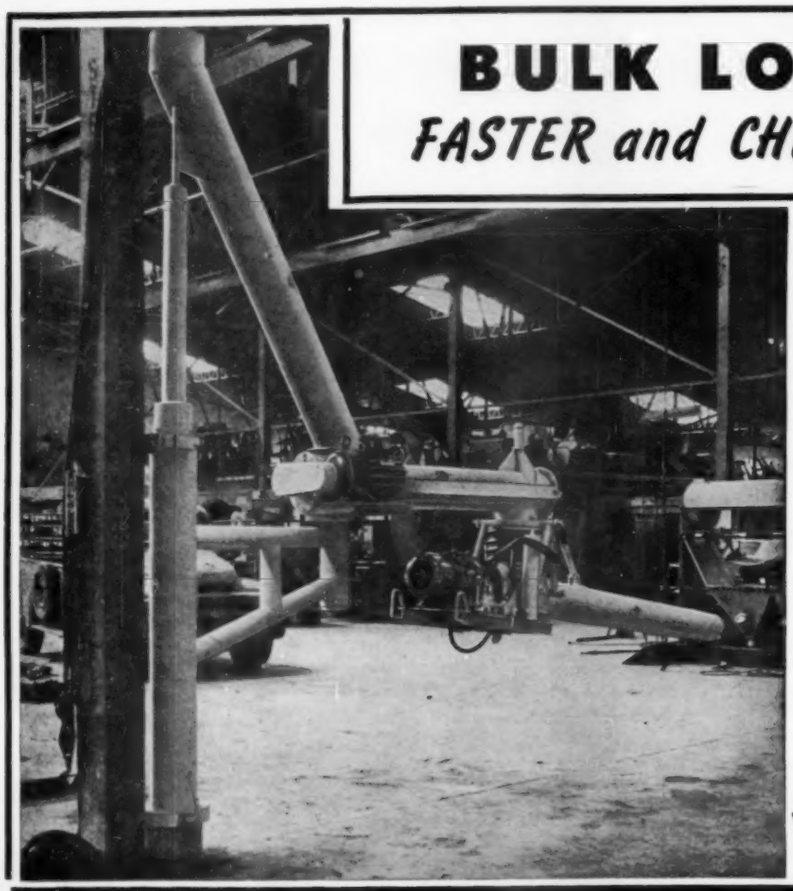
The decreasing influence of the itch and hair slicking on milk production may have been due partially to the painful irritation caused by it. It is also believed that another factor may have been a physiological disturbance caused by the condition.

In summary, the authors report that it has been statistically demonstrated that the itch and hair slicking adversely affect fertility and milk production and are accompanied by a general disturbance. It has been proved that the itch can be prevented and cured with zinc.

EDITOR'S NOTE: This research report is a sequel to findings of the authors first published in the U.S. in the June 3, 1961, issue of Feedstuffs. Mr. Haaranen is with the Veterinary Medicine Laboratory at Siilinjarvi, Finland, and Kalervo Hyppola, is in the feed department of Vaasan Hoyrymylly Osakeyhtio at Helsinki.

FIRM GRANTED CHARTER

PROVIDENCE, R.I. — Providence Hay, Grain & Hardware, Inc., a firm which will deal in feeds, general hardware and real estate has been granted a charter in Rhode Island. Incorporators are Nicola Caprio, John Harrison and Mary I. Lang.



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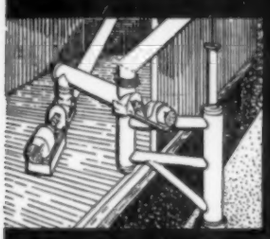

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How do you know if you're following the right feeding program? Well, one way is to get absolute proof you're doing the best you can. For one reason or another, these four cattle feeders quit feeding Stilbosol in their cattle fattening rations. Today, they are once again feeding Stilbosol. They rediscovered the fact that Stilbosol means extra dollars in their pockets. Their stories make for some mighty interesting reading.

"Our cost of gain went down 4¢ a pound when we put Stilbosol back in our ration. We're feeding Stilbosol again... this time for keeps," reports Don Sanderson, S & J Feedlots, Norton, Kansas. "A man couldn't last in this business if he didn't feed Stilbosol. Oh, sometimes he can make a profit if the margin is high enough, but in the long run he's going to go broke."

"We're feeding for profit, and Stilbosol helps us make it. We discovered that we have to feed Stilbosol if we're going to compete," answered Stanley Hurst, Manilla, Indiana. "To stay in this business, you've got to produce as economical as possible. From our past records, we figure we get about ½ pound extra daily gain when we feed Stilbosol. That's for both steers and heifers."

After seven years, Stilbosol continues to give cattle feeders an extra 15% gain on 10% less feed.

"We used to feed Stilbosol. Our first lot of cattle after quitting Stilbosol averaged about 2.5 pounds per day. On the first lot after we went back to Stilbosol... and under almost the same conditions... we got an average of three pounds per day. We figure Stilbosol gives us an extra 100,000 pounds of beef every year. This is based on feeding 1,500 head a year," said Wilbur "Bo" Foster, Auxvasse, Mo.

"I quit feeding Stilbosol for a spell last year. Went back to it though. Why? Because Stilbosol gives us an extra ½ lb. daily gain," stated Jack Dunlap, professional farm manager, Williamsport, Ohio. "You've got to keep abreast of things in this business and you've got to take advantage of developments like Stilbosol. I'll tell you one thing—I know Stilbosol makes us money."

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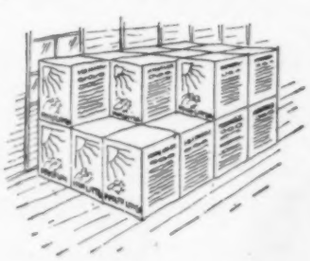

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Research on the Use of PIGMENTERS

By Dr. W. H. Hastings
Kansas State University

Established consumer preference for color in poultry products is met with pigmentation from a ration containing 60% yellow corn and 3% dehydrated alfalfa meal (6, 7). Formulation by least-cost nutrient selection may result in radical changes in feed pigment concentration, unless these ingredients are required in fixed amounts or equivalent pigmentation can be obtained from other sources. In order to use pigmenters economically to produce accepted pigmentation, pigment requirements must be expressed numerically in weight or units per pound of ingredient and have a monetary value.

During the past few years, chemical and biological data have been compiled which enable the pigmentation requirement to take its place as a mathematical equation in formulation worksheets. There is still much work to be done on the effects of source, storage and processing on the biological activity of plant pigmenters and the time relationship affecting pigment deposition in body tissues.

Background

One hundred years ago Stradeler proposed that egg yolk color was bilirubin. This was soon corrected by Thadicum, who isolated in egg yolk a lipochrome (fat-soluble), unsaponifiable pigment and called it "lutein." It was later shown to be identical with xanthophyll and classified as a carotenoid formed by partial oxidation of carotenes. The pigment was thought to have no relationship to growth, well being or reproduction, and current work (9) has substantiated this belief.

The carotenoids available to the feed industry as poultry pigmenters are mostly lutein, or xanthophyll, and zeaxanthin, obtained from green plants and corn. Peterson et al. (10) reported that xanthophylls from green plants deposited in poultry fat tissues to the extent of about 15% and those from yellow corn about 26% of the concentration ingested. Later, Day and Williams (4) described yellow corn xanthophylls as 100% available and, by comparison, that in alfalfa meal was 30.7% available. On the same basis, the biological value of pigments in corn gluten meal (41% protein) was found to be 46.5% available.

Since the chemical determination of pigmenters often includes non-pigmenting chlorophylls and carotenes, the literature references to their value must be carefully analyzed to arrive at a satisfactory measure of biological active pigment to use in formulation equations.

Unprocessed corn has been reported to contain 0.20 mg. xanthophyll per pound (3) and is considered 100% available as determined by biological scores (11). Dehydrated alfalfa meal contains 40-250 mg. per pound and has an average availability compared with corn of 36% (1). Corn gluten meal (60% protein) contains 125-200 mg. per pound xanthophyll with about 50% of this available. Xanthophyll concentrates, dyes and primary fermentation products have been reported to contain from 0-1,000 mg. per pound. One such material will be included in this discussion, an algae concentrate containing one gm. of xanthophyll per pound. It will be considered 100% efficient in its biological activity.

Average Xanthophyll Values

A table can therefore be compiled (see Table 1) of average xanthophyll values in certain ingredients used as pigmenters by the feed industry (2, 8, 12). Each product has been adjusted arbitrarily for variations in samples and time in storage before use.

TABLE 1. Xanthophyll Values of Ingredients Used to Meet Pigmentation Requirements in Poultry Rations.

Ingredient	Hybrid corn	Dehydrated alfalfa	60% protein gluten meal	Algae concentrate
Ave. chemical value, mgm./lb.	9	125	160	1,000
Per cent available	100	36	50	100
Biological value, mgm./lb.	9	45	80	1,000

Data on the relation between carotene pigments in feed rations and the amount present in poultry products has been presented by several workers (4, 5, 7, 10). A summary of pigmentation requirements expressed as milligrams of xanthophyll per pound of ration is shown in Table 2.

TABLE 2. Carotenoid Pigment Required in Feed to Impart a "Suitable" Consumer Score to Poultry Products.

Purpose of feed	Xanthophyll, mgm./lb.
Starting, growing replacement chicks	none
Broiler, complete starter-finisher, 0-8 weeks	6.25
Broiler, complete finisher, 2-3 weeks before marketing	12.50
Egg production, complete, medium yolk intensity	10.00

Linear Programming

To evaluate these pigment sources and determine the variable amounts to use in meeting formula requirements, no better method of analysis can be found than linear programming with an electronic computer. Test formulas were obtained to satisfy the recommended nutrient and pigmentation requirements of a broiler ration. The ingredients shown in Table 1, and several others found in most feed mills, were available as sources of the requirements listed in Table 3.

Fixed amounts of ingredients per ton included: 10 lb. salt, 10 lb. vitamin-drug premix, 20 lb. dehydrated alfalfa meal, 20 lb. fermentation solubles and 40 lb. fish meal or solubles.

W. H. Hastings

AUTHOR—Dr. Hastings, department of flour and feed milling industries, Kansas State University, checks electronic computer tabulation sheet used in study which provided the data for this article, based on a presentation at a cereal chemists' meeting.

TABLE 3. Requirements for a Broiler Ration Used as a Complete Starter-Finisher Feed.

Item required	Amount required
Crude protein, more than	21.00%
Vitamin A, more than	2000 I. U. per lb.
Added animal fat, not more than	80 lb. per ton
Calories, more than	1000 per lb.
Phosphorus, more than	0.7%
Calcium, more than	1.1%
Calcium, less than	1.2%
Xanthophyll, more than	6.25 mgm. per lb.
Methionine, more than	0.45%
Lysine, more than	1.0%
Weight, equal to or less than	2000 lb.

The contributions these made to each requirement were subtracted from the total and the sub-total requirements for 1,900 lb. were programmed on a least-cost basis using an IBM-650 computer. Prices used are given in Table 4.

TABLE 4. Market Prices Used for Ingredients Supplying Sources of Requirements.

Ingredient	Cost per ton
Corn	$40.00
Sorghum grain	40.00
Barley	40.00
Wheat middlings	32.00
Soybean meal	72.00
Cottonseed oil meal	72.00
Meat scraps	94.00
Corn gluten meal (60% protein)	130.00
Dehydrated alfalfa meal	39.00
Animal fat	120.00
Limestone	10.00
Dicalcium-phosphate	83.00
Methionine	3100.00
Lysine	1100.00
Xanthophyll concentrate	1200.00

In order to determine the least-cost formula based on nutrient requirement only, a computer answer was obtained with the xanthophyll equation equal to or greater than zero. Corn gluten meal was over priced by $1,000 per ton, leaving three variables, yellow corn, dehydrated alfalfa and algae concentrate to supply xanthophyll. The formula developed under these conditions is shown in Table 5.

TABLE 5. Least-Cost Formula, No Xanthophyll Requirement, Corn Gluten Meal Over-Priced.

Ingredient	Lb.	
Yellow corn	1202	
Soybean meal	486	
Meat scraps	128.5	
Animal fat	68.3	Cost $53.64
Limestone	12.0	
Dehydrated alfalfa	2.0	
Methionine	1.2	
Total	1900.0	

With no xanthophyll requirement, the slack variable for this process (equation) showed a value of 10.9 gm. per ton, which, added to 0.9 gm. from the fixed quantity of dehydrated alfalfa, brings the free pigment content to 11.8 gm. Dehydrated alfalfa meal was used to complete the vitamin A requirement, almost satisfied by 60% yellow corn, plus the fixed amount of dehydrated alfalfa meal.

Again with no xanthophyll requirement, the price of corn was increased in increments of $1 per ton until at $43 it was removed from the formula and sorghum grain entered as the main source of energy and weight. The formula without corn is shown in Table 6.

TABLE 6. Least-Cost Formula, No Xanthophyll Required, Corn and Corn Gluten Meal Over-Priced.

Ingredient	Lb.	
Sorghum grain	1205.6	
Soybean meal	426	
Meat scraps	165.5	
Animal fat	80	Cost $55.06
Dehydrated alfalfa	20	
Methionine	1.7	
Limestone	1.3	
Total	1900.0	

Dehydrated alfalfa meal entered at 20 lb. to supply the vitamin A previously obtained from yellow corn. More animal fat and meat scraps were used to compensate for the Calories displaced from the formula by the entry of alfalfa meal. Methionine was increased to make up for that in corn which is 0.2% greater than this amino acid in sorghum grain. A shadow price for corn gave its non-xanthophyll, nutrient value in the test ration, approximately $42.50 per ton.

First Formula Repeated

With xanthophyll required at 12.5 gm. per ton (6.25 mg. per pound of ration), and all original prices, still excluding corn gluten meal by over pricing it, the first formula was requested again, and the answer is shown in Table 7.

TABLE 7. Least-Cost Formula, 12.5 Gm. Xanthophyll Required, Corn Gluten Meal Over-Priced.

Ingredient	Lb.	
Yellow corn	1228.6	
Soybean meal	428	
Meat scraps	172.75	Cost $53.87
Animal fat	57.3	
Alfalfa meal	12	
Methionine	1.35	
Total	1900.00	

This formula cost $0.23 more than that requiring no xanthophyll, and contained 0.7 gm. more of the pigment. The extra pigment could be calculated to have a monetary value of $0.33 per gm., contributed for the most part by dehydrated alfalfa meal.

Several answers were obtained with increased values for yellow corn, until it began to leave the formula. At $50 per ton, the computer formula is shown in Table 8.

TABLE 8. Least-Cost Formula Requiring 12.5 Gm. Xanthophyll with Corn Gluten Meal Over-Priced and Yellow Corn Priced at $50 per Ton.

Ingredient	Lb.	
Yellow corn	1006	
Soybean meal	428	
Sorghum grain	161	
Meat scraps	166	Cost $59.52
Animal fat	80	
Dehydrated alfalfa	56.65	
Methionine	1.35	
Total	1900.00	

At $54 per ton for yellow corn, it entered the answer at only 133 lb. The algae concentrate appeared at 9.6 lb., and the total cost (1,900 lb.) was $61.56.

When yellow corn was priced at $55 per ton, it disappeared entirely from the answer, alfalfa meal was used at the limit of vitamin A requirement, animal fat was used at its restricted amount, and algae concentrate was the chief source of xanthophyll. This formula is shown in Table 9.

TABLE 9. Least-Cost Formula Requiring 12.5 Gm. Xanthophyll, with Corn Gluten Meal Over-Priced and Yellow Corn Priced at $55 per Ton.

Ingredient	Lb.	
Sorghum grain	1207	
Animal fat	80	Cost $61.59
Soybean meal	386	
Meat scraps	194.5	
Dehydrated alfalfa	20	
Algae concentrate	10.7	
Methionine	1.8	
Total	1900.0	

Another Formula

By removing the restriction on the use of animal fat, and over-pricing yellow corn and corn gluten meal, another formula was obtained with the xanthophyll requirement 12.5 gm., allowing the use of two pigmenters, dehydrated alfalfa meal and algae concentrate. This answer is shown in Table 10.

The calculated value of xanthophyll from dehydrated alfalfa, based

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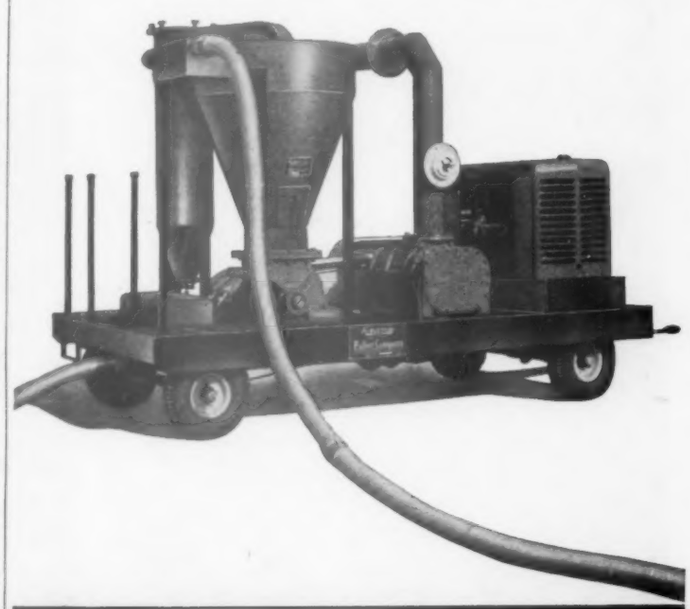

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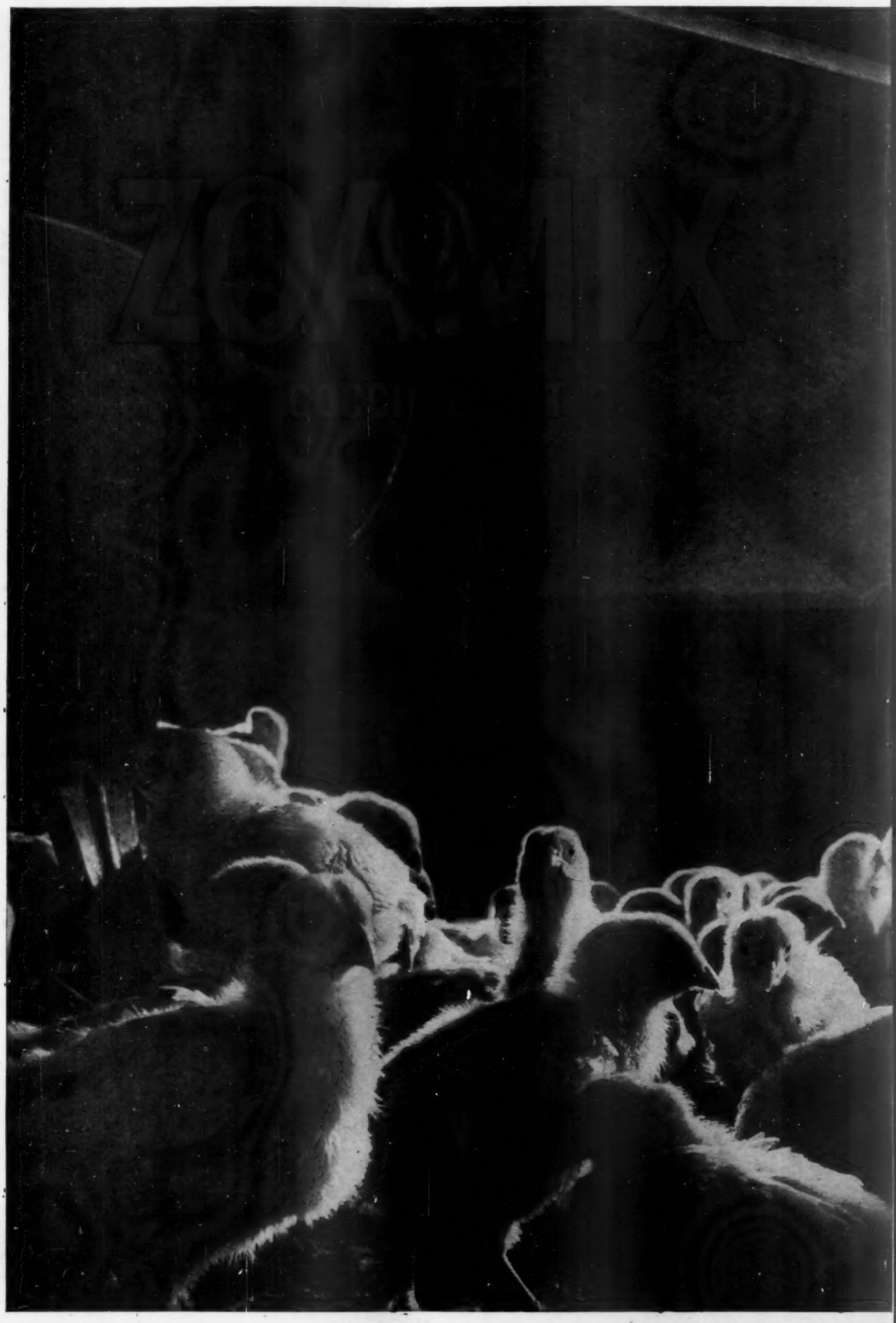
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TABLE 10. Least-Cost Formula Requiring 12.5 Gm. Xanthophyll, with Corn Gluten Meal and Corn Over-Priced, No Restriction on Use of Animal Fat.

Ingredient	Lb.	
Sorghum grain	884	
Soybean meal	439.6	
Dehydrated alfalfa	258	
Animal fat	184.6	Cost $57.89
Meat scraps	131	
Limestone	1.75	
Methionine	1.36	
Total	1900.00	

on increases in formula cost due to increments in xanthophyll requirement or over-pricing yellow corn, was from $0.33 to $0.373 per gm. of pigment. The cost of xanthophyll from yellow corn was nothing until its limit of weight (about 1,200 lb.) had contributed 10.9 gm. As the cost of yellow corn increased from $42.50 (its high value as a source of nutrient requirements) to $55 per ton, the cost of xanthophyll increased, until it could be considered to equal that of the algae concentrate which was needed to replace the xanthophyll in yellow corn as it was removed from the answer.

In the event that total xanthophyll requirement was 25 gm. per ton, and corn gluten meal was still over priced or unavailable, all other prices and restrictions being as shown in Tables 3 and 4, the algae concentrate was utilized to advantage as shown in Table 11.

As in other formulas, xanthophyll from dehydrated alfalfa calculated a cost of $0.34 per gm., assuming that yellow corn contributed its color free as an ingredient supplying other nutrients at least-cost, and the algae concentrate cost $0.60 per lb.

Corn Gluten Meal at Market Price

The entry of corn gluten meal (60% protein) changed the formula and xanthophyll costs. Using all ingredients with original prices and requirements shown in Tables 3 and 4, the computer formula is shown in Table 12.

TABLE 11. Least-Cost Formula Requiring 25 Gm. Xanthophyll per Ton, Corn Gluten Meal Over-Priced.

Ingredient	Lb.	
Yellow corn	1168	
Soybean meal	423	
Meat scraps	168	
Animal fat	80	Cost $61.09
Dehydrated alfalfa	48.3	
Algae concentrate	11.4	
Methionine	1.3	
Total	1900.0	

TABLE 12. Least-Cost Formula, Requirements and Ingredient Prices as Listed in Tables 3 and 4.

Ingredient	Lb.	
Yellow corn	1342.4	
Soybean meal	280	
Corn gluten meal	135	Cost $52.86
Meat scraps	130	
Limestone	12.0	
Methionine	0.6	
Total	1900.0	

The use of corn gluten meal at 135 lb. per ton lowered the cost of the formula by about $1. Due to the high protein concentration of this ingredient, less soybean meal was required, making it possible to utilize more low-protein and low-cost grain. The high-calorie content of corn gluten meal contributed sufficient energy to eliminate additional animal fat. No dehydrated alfalfa meal was needed to supply vitamin A, and the methionine amount was decreased by 50%. Total xanthophyll calculated 23.8 gm., 11.3 gm. in excess of formula requirements. Thus the ration is adequate for short-time feeding to achieve high market quality.

An increase in xanthophyll requirements to 25.9 gm. per ton, or 2.1 gm. above the level naturally contributed by the formula in Table 12, required more xanthophyll from the pigmenters available. Additional corn gluten meal entered the answer to supply this, and the nutrients carried along with xanthophyll allowed wheat middlings to enter for the first time in this series of formulas (see Table 13).

TABLE 13. Least-Cost Formula Requiring 25.9 Gm. Xanthophyll, Prices and Other Requirements as Shown in Tables 3 and 4.

Ingredient	Lb.	
Yellow corn	1318	
Soybean meal	236	
Corn gluten meal	164	
Meat scraps	125.5	Cost $52.93
Wheat middlings	42	
Limestone	14	
Methionine	0.6	
Total	1900.0	

The xanthophyll required for this solution was 2.1 gm. more than was brought in by a selection of ingredients for a least-cost nutrient answer, no xanthophyll required. The additional formula cost, $0.13, for this 2.1 gm. pigment calculated a cost of $0.062 per gm. of xanthophyll. When corn gluten meal was needed as a pigment source beyond its value to supply non-pigment nutrient requirements, the cost per gram of xanthophyll increased until it equalled that of the algae concentrate.

SUMMARY—Xanthophyll is often carried free into a formula feed by yellow corn, dehydrated alfalfa and corn gluten meal, used as sources of required nutrients. In situations where pigmentation requirements are beyond the ability of "pigmenter" ingredients to supply, or where these ingredients are "out-of-line" in nutrient cost, it is convenient to know their pigmentation value.

It becomes physically impossible for yellow corn to supply more pigment than contained in 1,200 to 1,300 lb. per ton. Its xanthophyll value, tested by requiring pigment in increasing amounts and advancing the cost of yellow corn, ranges from nothing to the cost of an amount of xanthophyll concentrate equal to requirements. The value of yellow corn as a pigmenter, beyond its value as a source of nutrients, is a linear relationship.

The value of xanthophyll from dehydrated alfalfa is not a linear function of the market price of this ingredient. It depends on the requirements, the cost of alfalfa and formula adjustments necessary to provide for Calories from other ingredients.

Corn gluten meal may be used as a source of nutrients regardless of its xanthophyll content. As its price increases to more than its value to supply least-cost nutrients, the cost of using it as a pigmenter depends upon the amount required and the cost of a pigment "equalizer." With three pigmenter ingredients available to supply xanthophyll, corn gluten meal leaves the formula as its price is increased beyond its nutrient value plus a xanthophyll value equal to an equivalent amount of xanthophyll obtained from algae concentrate. As corn gluten meal disappears from the answer, algae concentrate enters, along with the limit of dehydrated alfalfa permitted on a least-cost basis.

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SALES MEETING—Dr. Milton Scott, left, professor of animal husbandry at Cornell University, is pictured summarizing trends in unidentified growth factor nutrition to Dr. Hal Yacowitz, standing, consultant to the Amburgo Co., Philadelphia, and Samuel M. Golden, right, president of the Amburgo firm. Dr. Scott was principal speaker at the annual Amburgo sales meeting at Golden Acres, the company's demonstration farm in Bucks County, Pa.

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End First Year of Research on SPF Chickens in Maine

ORONO, MAINE—A poultry disease prevention program seeking to develop poultry flocks which will reach new production highs without being hindered by disease has just ended its first year at the University of Maine, Orono.

Birds managed by the project are known as specific pathogen-free chickens (SPF chickens). Several long-range goals are sought by Dr. H. L. Chute, university pathologist who originated the program, and his co-workers:

They hope that a "clean" poultry area may be established in Maine, from which poultry meat, breeders and eggs may be shipped anywhere in the world. And, besides premium prices that can be commanded, it is expected there will be increased production from poultry stock, whether broilers or layers. Maine now exports more hatching eggs to other nations than any state, and, insofar as is known, Maine eggs can be shipped to any country in the world, it was stated.

This record, which the new program is out to enhance, stems from a 40-year record of testing for pullorum and typhoid. In the early 1920's, some 20% of the 3,000 birds being tested at that time were infected. By 1951, more than 1½ million birds were being tested with only 0.001% showing infection with either pullorum or typhoid. In this year's testing, a new high of 1,800,000 birds were tested with no infection being found. This is claimed to be the best record in the nation.

Dr. Chute left for England recently to explain the program to the British Chicken Assn., and he will also appear on a program at Brescia, Italy. In mid-October he was in Argentina to test a 60,000-hen flock for the Argentine government. He has also had several U.S. appearances.

Insofar as sanitation is concerned, Maine is ideally located geographically, officials say. With the exception of five main roads leading into New Hampshire, there is little opportunity for transporting poultry across the state line. Canada and the Atlantic Ocean are buffers.

Five SPF flocks are in production in the state at present. The original is the Sidney Farm at Sidney, owned by Arbor Acres. This farm is currently hatching 3,000 chicks weekly. Cockerels are being used for growth comparison tests and the pullets are going to establish clean flocks. Arbor Acres is putting 14,000 pullets into a new SPF flock at Skowhegan, for which a new building has just been completed.

Already, a number of demands have been made for the "clean" poultry products from the SPF flocks. The army biological warfare installation at Camp Dietrich, Md., has been supplied eggs to meet experimental needs for non-medicated eggs. Also, the University of California has requested eggs for use in experiments. All SPF flocks are managed without vaccination or medication, the purpose being to keep any form of disease out.

Because of this, management of the SPF flocks is very similar to a laboratory operation. The flock owner must provide a house with cement floors, screened windows and doors, locks, freedom from all visitors or service men, bulk feeders with outside filler pipes and other measures which aid in preventing exposure of the flock to any disease organisms. Any poultryman who can comply can become a candidate for developing SPF chickens.

The whole venture is a cooperative one between the Maine Department of Agriculture, the U.S. Department of Agriculture, and the university department of animal pathology. Dr. D. R. Stauffer of the USDA has been assigned duty in Maine to supervise the flocks as part of USDA's agricultural research service.

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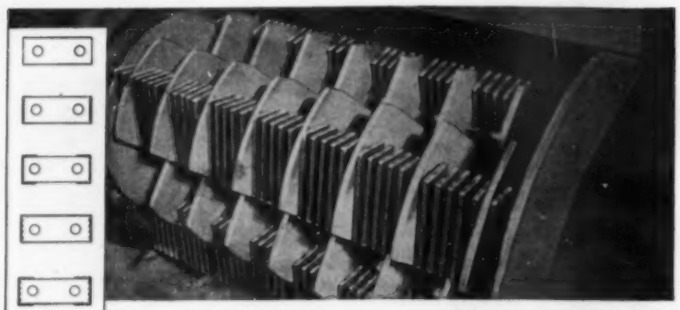

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Discuss Reporting Division Earnings At GMI Meeting

MINNEAPOLIS — An exchange of comment between Lewis Gilbert, New York, a stockholder in General Mills, Minneapolis, and C. H. Bell, who at the time was president of the company and is now chairman of the board, during the annual stockholders meeting touched on feed division operations.

The conversation, which occurred during a discussion session on company operations, was reported in the firm's publication, "Horizons," which carried an account of the meeting of stockholders.

Mr. Gilbert began the discussion with the question: "Now, referring to the divisions, was the flour division in the red during the year?"

President Bell: "Mr. Gilbert, you and I have had some interesting conversations on this subject over the years; and I think you feel very deeply and sincerely about the matter, and I feel equally deeply and sincerely about it, each of us from different points of view.

"We have never felt, Mr. Gilbert, as you know, that it was in the stockholders' interest and it was not proper protection for them to reveal our earnings by divisions because it gave our competition considerable comfort.

"Now, last year, if you will recall, we broke down a little bit and did reveal a loss situation in our feed activity. I did it with some reluctance because I didn't really feel that it was best.

"Now I have before me a bulletin of a competitor which picks up this statement and says in effect to its salesmen: 'Go to your dealers and prospects, including General Mills dealers, and tell them how sorry they would be if they were linked with General Mills. They lost money in the feed business.' And this has been a pretty tough thing for us to combat in certain places. And it's an example of the real feeling that I have that this is not in the best interest of the stockholders. We have discussed this privately, and I hope that you are convinced that my sincerity is not for any ulterior motives."

Mr. Gilbert: "I'm sure of that. Are there any companies in the feed business that are making any money?"

President Bell: "Yes, there are one or two companies in the feed business that are making money, and there are a great many others who are going broke and have gone broke."

Mr. Gilbert: "This is exactly the point of why it is important to know; because, if one or two people can be making money in it, then there must be something wrong with that particular division. That is the basic reason—or that it is too overcrowded and we should then discontinue it.

"Let me revise the question, however. Have any of the seven divisions been consistent losers?"

President Bell: "No, not consistent losers."

Mr. Gilbert: "However, I want the record to show that we believe we should have more information about how the various divisions are doing. I want this board and this management to watch very seriously in the interest of the shareholders this whole question of individual division profit and loss. I think it is only a question of time until every company is going to have to reveal this anyhow under new Securities and Exchange Commission rules."

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FOR POULTRY

Oyster Shell Products Company Mobile, Alabama
Subsidiary of Southern Industries Corporation

Report on Feather Meal in Chick Diet

KNOXVILLE, TENN.—The growth rate and feed efficiency of chicks fed a diet containing 14.5% feather meal were not improved by supplementing the diets with extra vitamins and minerals and/or massive quantities of amino acids (in the form of a casein-gelatin mixture), it was found in tests at the University of Tennessee, outlined in a progress report from the school.

Two growth trials were designed to study some factors which might affect the usefulness of feather meal as an ingredient in broiler diets. This material is often used in broiler diets as a source of protein; however, it is usually limited to 5% or less of the diet.

Lime-cooked feather meal was found to be less satisfactory as a feed ingredient than either of two hydrolyzed feather meals when used in chick diets at a level of 14.5% of the total diet.

No significant differences in growth rate or feed efficiency of chicks could be attributed to the source of processing method of feather meal when 2% or 6% levels were used in the diets.

The growth rate and feed efficiency of chicks fed diets containing 6% feather meal were not significantly different from those of chicks fed diets containing no feather meal or 2% feather meal.

NOW use nf-180 to increase pig feed tonnage

nf-180 - - already proved effective against scours in farrowing and treatment feeds - - can now improve the performance of prestarter, starter and grower feeds

What's the most serious problem hog raisers have to face—pneumonia . . . cholera . . . atrophic rhinitis . . . internal parasites? No. In a nationwide survey completed in October, 1961, hog men rated *scours* their most costly and worrisome problem . . . by far.

The reason: most drugs promising scours control just can't cope with the increasingly frequent and increasingly severe scours outbreaks plaguing hog raisers today. Germ resistance to antibiotics, sulfas and arsenicals is one of the problems.

And, unless positive steps are taken, scours losses can be expected to get even worse. That's because the increased seriousness of scours appears to go hand-in-hand with modern hog raising methods. Continuous use of farrowing and feed-out facilities . . . larger herds . . . confinement feeding . . . widely scattered sources of breeding stock and feeder pigs . . . all place increased stress on young pigs and complicate sanitation and health programs.

The one answer: nf-180

During the last three years, nf-180 has proved itself the one drug that stops scours practically without exception . . . even where other products fail. Up to now, nf-180 has been used three ways:

First, it was used as an in-the-feed treatment by farmers who were on the brink of being forced out of the hog business by scours. And nf-180 worked!

Second, a liquid form of nf-180 for oral administration to suckling pigs was introduced early in 1960. It worked, too. *nf-180 Suspension* quickly became the fastest-selling product of its kind.

Hess & Clark introduced a third use of nf-180 for swine in the spring of 1960. It was a new concept in scours protection — *treating the pregnant sow to protect the baby pigs.* This program breaks the scours infection cycle by killing scours organisms in the sow's intestine . . . prevents scours germs from being transmitted to the newly farrowed pigs. Today, nf-180 is more widely used in farrowing rations than any other medication.

New! nf-180 cleared for pig feed

Now you can take advantage of nf-180's reputation for scours prevention by adding it to your prestarter, starter and grower feeds.

Medicated with nf-180, your pig feeds will cut scours-caused mortality in young pigs . . . reduce stunting and unthriftiness . . . help customers wean more and bigger pigs. Your nf-180-medicated pig feeds will, for the first time, end the worry of pig scours . . . reason enough for customers and prospects to buy your program over competition.

But you needn't limit this demonstration of extra feed performance to farms with severe scours problems. You can also use nf-180-medicated feeds to improve performance of apparently good-doing pigs. Actually, pigs are seldom 100% healthy. They are almost always held back by "hidden" scours problems which cause pigs to go off feed . . . roughen up and slack off in growth after weaning, castration and other stresses. nf-180 clears up this low-level disease drag . . . helps your feed make good-doing pigs do even better.

For details on 2 ways nf-180 can help you increase hog feed sales, turn the page ▶

nf- 180 helps you outsell competitive pig feeds these 2 important ways

1. Helps you convince prospects to try and compare your pig feeds

The first step in selling a hog feed prospect is getting him to try your feed. nf-180 helps make this job easier in several ways:

DEALER ENTHUSIASM — Hog raisers who try nf-180 medicated pig feeds see visible results. They become enthusiastic boosters . . . and this spirit rubs off on dealers. And, an enthusiastic dealer can't help but be a better salesman for you.

REPUTATION OF nf-180— nf-180's reputation for delivering dependable results as a scours treatment and in the farrowing ration is an established fact. This makes it easier for you to sell the extended protection of nf-180 in prestarter, starter and grower feeds.

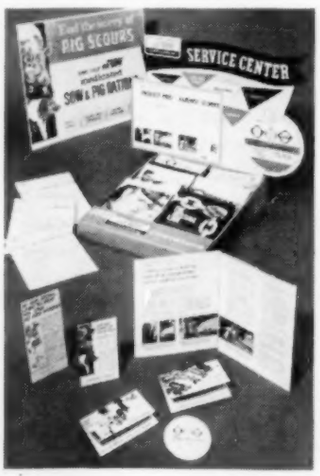
MAGAZINE, RADIO ADVERTISING — This spring your customers will hardly be able to open a farm or hog magazine without seeing an advertisement for nf-180 medicated pig feeds. And these information-packed nf-180 ads really sell. One dealer wrote, "This is the most effective advertising we have seen for many years. It really has brought customers to the mill."

Backing up this magazine advertising are nf-180 radio announcements on 30 stations in 10 mid-western states.

LOCAL SELLING HELPS — Hess & Clark provides all the local promotional help you need to sell nf-180 medicated pig feeds. Included are posters, handout pieces, mailers, counter displays.

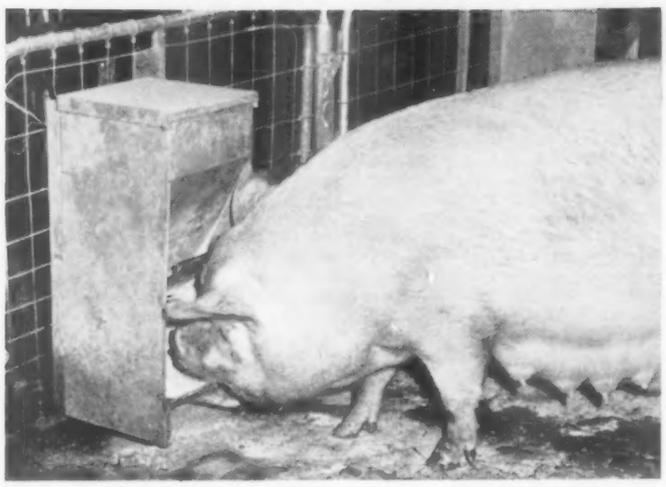
FARMER MEETINGS—These can be the best selling vehicles of all. Make them more effective than ever with a full-color sound slide film and a 13½ minute, 16 mm. color film on nf-180 medicated swine feeds.

EFFECTIVE ADVERTISING — In a farm magazine survey of 1,100 feed dealers, 55.7% of the dealers reported direct inquiries from nf-180 advertising . . . 53.4% reported definite prospects for future feed sales.



LOCAL SELLING HELP — Posters, mailers, informative handout pieces and the nf-180 Service Center for store counters help dealers identify with and sell nf-180 feeds.

PEP UP FARMER MEETINGS — Two color films to help you sell nf-180-medicated pig feeds: a sound-slide film entitled "The Missing Link" . . . and a 16 mm. movie, "And This Little Piggy Had None."



FIRST, BREAK THE SCOURS CYCLE — A solidly established way to protect newborn pigs from scours is to feed an nf-180-medicated sow feed one week before and two weeks after farrowing. nf-180 kills scours organisms in the sow's intestine . . . prevents them from being carried into clean pens and infecting the pigs.

NOW EXTEND nf-180 PROTECTION — New nf-180-medicated creep, starter and grower feeds now enable hog raisers to protect pigs against scours through the critical early growth period. Sell an nf-180-medicated pig feed to help your customers reduce stunting, cut mortality, improve feed efficiency right from the start.

2. Gives your pig feeds an edge in feeder comparison tests

Once you get a prospect to try nf-180 medicated pig feeds — especially a prospect with a scours problem in his herd — you can almost be sure of a faithful customer for a long time to come.

The reason: your nf-180 medicated pig feeds will prevent discouraging scours problems that won't yield to any other kind of starter feed. Even on farms where scours is not severe or even apparent, nf-180 will improve the performance of your feed . . . help hog raisers wean more and bigger pigs.

For best results, recommend that hog raisers start with an nf-180 farrowing feed and follow with your nf-180 medicated pig feeds. Either program used alone, however, will show profitable results. Here are the recommended programs:

BREAK THE SCOURS CYCLE with your sow farrowing feed containing 150 grams furazolidone (nf-180) per ton. Fed one week before and two weeks after farrowing, an nf-180 sow feed kills scours organisms in the sows intestinal tract . . . prevents them from being carried into clean pens and transmitted to the baby pigs.

CONTINUE PROTECTION by following with your nf-180 pig feed as soon as pigs begin to eat. nf-180 will protect against scours, reduce stunting, speed gains and improve efficiency during the critical early growing period . . . when differences in feed performance really stand out.

These men gave nf-180 a trial . . . now insist on it

Cliford Branstad | John High | Ken Kirby | Bernard Kisch | Howard Riley

TYPICAL RESULTS FROM INTERVIEWS WITH NF-180 USERS

	before nf-180 feeds		after nf-180 feeds		
	pigs farrowed per sow	pigs weaned per sow	pigs farrowed per sow	pigs weaned per sow	comments
Cliford Branstad Thompson, Iowa	11-12	7	11-12	9	"Scours isn't nearly the problem it used to be."
John High Rockford Ohio	12	9	12	9	". . . far less stunting and setbacks."
Ken Kirby Prospect, Kentucky	10	5	10	10	". . . marketing pigs 2-3 weeks earlier."
Bernard Kisch Charles City, Iowa	9-12	6	10	8.5	". . . weaning weights considerably higher."
Howard Riley Charlotte, Michigan	8	7.5	10.2	10	". . . pigs are 5 lbs. heavier at weaning."

Give an nf-180-medicated pig starter feed a try during the early farrowings this spring. Judge for yourself if it isn't just what you need to stimulate hog feed sales.

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Brand of furazolidone

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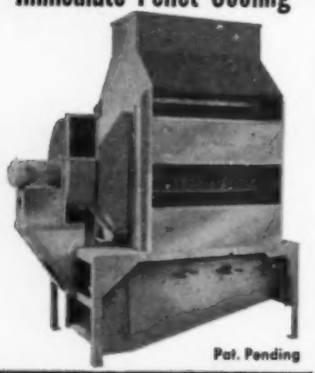

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The T-R-H "Cascade" eliminates sticky pellets blocking discharge and prevents mold formation in storage. Easy accessibility of all areas makes maintenance a breeze.
This high-capacity unit is available in sizes having an output of 1½ to 10 tons per hour. Standard black iron construction, but units may be specially ordered in galvanized or stainless steel.

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Scientists Discuss Current Research Topics At University of Florida Annual Swine Day

By DR. H. D. WALLACE
University of Florida

GAINESVILLE, FLA.—The sixth annual Florida Swine Day was held at Gainesville Sept. 15. A large crowd attended to hear a number of timely subjects discussed. Following registration, the swine producers were officially welcomed to the University Swine Farm by Dr. J. R. Beckenbach, director of the Agricultural Experiment Station.

First on the speaking program was Dr. H. D. Wallace, department of animal science, University of Florida, who presented research results from the first year of study on a project concerned with "Management of Cost Factors Related to Multiple Farrowing."

After describing the total routine management program, Dr. Wallace presented data (Table 1) on sow performance during the past year. The data suggest certain seasonal effects with the best sow performance occurring in the early spring.

The influence of 1 vs. 2 matings per heat period on litter size and pigs weaned is presented in Table 2. Sows mated twice during the heat period farrowed and raised an average of one pig more per litter. There was no significant difference in percent survival.

A comparison of the performance of purebred Duroc sows and crossbred sows (Duroc × Landrace) is summarized in Table 3. The crossbred sows were more prolific, farrowing an average of over one live pig more per litter. These sows also weaned almost 1½ pigs more per litter. Pig survival was similar for the two breed groups.

Preliminary data on the continuous feeding of distillers dried corn solubles to sows was discussed and is summarized in Table 4. Solubles were included at a level of 5%, in a ration fed on pasture and fortified with all known nutritive requirements, as a possible source of essential unidentified nutritive factors. Thus far, sow performance does not appear to have been influenced significantly by the supplementation.

Self Feeder Research

Dr. G. E. Combs, department of animal science, University of Florida, presented the results of three experiments concerned with self feeder hole allowances and floor space requirements for growing-finishing pigs fed in concrete confinement. The data are presented in Tables 5, 6 and 7 and indicate that performance expressed in terms of gain and feed efficiency was similar for all treatments. This suggests that both floor and feeder space may be restricted to the limits imposed in these trials without impairing performance. However, limiting floor space severely necessitates more frequent cleaning and may antagonize problems such as tail biting. Increasing the number of pigs per feeder hole requires more frequent addition of feed.

Following the formal presentations by Drs. Wallace and Combs, the attendance was divided into five groups for a tour of the facilities and a look at the research presently in progress.

Embryo Survival Studies

Dr. A. C. Warnick, Florida researcher, discussed the effect of level of energy on embryo survival in gilts. A summary of results is presented in Table 8. The low energy gestation rations have not only induced a higher average ovulation rate in this study, but also permitted better survival. Another experiment involving embryo survival was concerned with temperature effects. This is summarized in Table 9. Gilts were assigned to one of 5 groups 10 days following first estrus and bred at the second estrus. Group 1 (control) remained in a pasture lot with ample natural shade. Group 2 was placed in constant temperature room at 90° F. at 10 days post estrus. One half of the gilts in Group 3 were moved to constant temperature room at 60° F. three days post breeding. Group 4 was maintained in constant temperature room at 60° F. commencing at 10 days post estrus and Group 5 was first cooled and then moved to 90° F. room at three days post breeding. Briefly, the data indicate that a high temperature of 90° F. may be more harmful to embryonic survival after three days post breeding than a high temperature previous to three days post breeding, but appears to be detrimental at both times.

Soaking Shelled Corn

Robert O'Bannon presented an up-to-date summary of a practical demonstration on value of soaking shelled corn. The performance and cost data are summarized in Table 10. Pigs fed the complete mixed ration have gained considerably faster than the free-choice groups. There is no evidence suggested by the data in this experiment to justify the soaking of shelled corn for growing-finishing pigs.

Summary of Other Research Reports

The Effect of Pre-Slaughter Feeding of Sucrose to Swine on Slaughter, Carcass and Quality Characteristics—A. Z. Palmer, H. D. Wallace and J. W. Carpenter. A study involving a total of 103 finished market hogs was conducted to determine the influence of a pre-slaughter feeding treatment on carcass yields. The feeding of a ration consisting of 60% ground corn and 40% sucrose was compared to the usual procedure of feeding straight shelled corn. The sugar ration increased feed consumption, liver weights, yields of the four lean cuts and improved tenderness and sweetness of the livers.

Ground Snapped Corn as a Substitute for Corn Meal in the Ration of Growing Finishing Swine—H. D. Wallace, G. E. Combs, A. Z. Palmer and J. W. Carpenter. Substituting ground snapped corn for corn meal for various periods of time during the growing-finishing period of swine produced the following results:

(1) Slowed gains and thus increased the time required for animals to reach a given market weight.

(2) Increased the feed required per unit of gain substantially enough so that the cheaper ground snapped corn ration became the most expensive under the conditions of this experiment.

(3) Increased the leanness of carcasses considerably as shown by a decreased backfat and an increased loin eye area and percent of lean cuts.

The improvement in carcass value was sufficient to offset the slightly higher total feed costs and permit greater returns for those groups fed ground snapped corn after reaching 100 or 150 lb. liveweight. This was

TABLE 1. Summary of Farrowing Performance During Past Year

Breeding period	Farrowing period	Number of litters	Av. number live pigs per litter	Av. number pigs weaned per litter	Per cent survival
April	August, 1960	18	9.06	7.94	87.6
June	October, 1960	21	9.09	8.00	88.0
September	January, 1961	15	9.93	8.87	89.3
November	March, 1961	28	9.39	9.09	96.8
February	June, 1961	20	9.45	7.70	81.5
April	August, 1961	24	9.21	7.33	79.6

TABLE 2. Comparison of 1 vs. 2 Matings Per Heat Period

Number matings	Number litters	Live pigs per litter	Pigs weaned per litter	Per cent survival
1	42	8.97	7.95	88.6
2	42	10.00	8.95	89.5

TABLE 3. Comparison of Purebred and Crossbred Sows

	Number litters	Live pigs per litter	Pigs weaned per litter	Per cent survival
Duroc	27	8.33	7.44	89.3
Crossbred (Duroc x Landrace)	65	9.78	8.87	90.7

TABLE 4. Continuous Feeding of Distillers Dried Corn Solubles to Sows

	Control	Solubles
Number of litters	41	37
Number live pigs per litter	9.72	9.91
Average birth weight, lb.	3.00	2.90
Number pigs weaned per litter (2 weeks)	8.59	8.93
Av. weight per pig weaned	7.98	7.70
Per cent survival	88.4	90.1

TABLE 5. The Influence of Self-Feeder Space on Pig Performance (Exp. 1)

Treatment	Pigs per self-feeder hole: 6.6 and 5*	3.3 and 2.5*
No. pigs	40	40
Av. initial weight	61.6	61.4
Av. final weight	196.8	192.3
Average daily gain:		
To approx. 125 lb.	1.53	1.55
126 lb. to mkt. weight	1.79	1.68
Total period	1.69	1.64
Average daily feed:		
To approx. 125 lb.	4.61	4.72
126 lb. to mkt. weight	6.75	6.24
Total period	5.74	5.50
Feed per lb. gain:		
To approx. 125 lb.	3.01	3.04
126 lb. to mkt. weight	3.77	3.71
Total period	3.40	3.35

*From initiation of trial until approximately 125 lb. body weight there were either 6.6 or 3.3 pigs per feeder hole; from 126 lb. to market pigs per feeder hole were reduced to 5 and 2.5 respectively.

TABLE 6. The Influence of Floor Space on Pig Performance (Exp. 2)

Treatment	Sq. ft. of floor area/pig: 16	8
No. pigs	42	42
Av. initial weight	44.4	43.6
Av. final weight	199.3	197.4
Average daily gain:		
To approx. 125 lb.	1.62	1.59
126 lb. to mkt. weight	1.83	1.84
Total period	1.71	1.69
Average daily feed:		
To approx. 125 lb.	4.84	4.80
126 lb. to mkt. weight	7.26	7.40
Total period	5.72	5.80
Feed/lb. gain:		
To approx. 125 lb.	2.98	3.01
126 lb. to mkt. weight	3.95	4.02
Total period	3.36	3.43

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If you're not presently using PRO-STREP, your growers are paying more to treat outbreaks of bluecomb than they need to!

This highly effective combination of penicillin and streptomycin helps cut losses from outbreaks of bluecomb *or* sinusitis. It also helps prevent early mortality from organisms susceptible to penicillin and streptomycin. Too, it aids in reducing off-feed slumps and weight losses following periods of stress. Best of all, PRO-STREP does it all *more economically than any single antibiotic—narrow- or broad-spectrum!*

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The Best Antibiotic Combination... **PRO-STREP®** *Penicillin and Streptomycin*

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TABLE 7. The Influence of Both Floor and Feeder Space on Pig Performance (Experiment 3)

Sq. ft./pig	16		8	
Pigs/feeder hole	6.6	3.3	6.6	3.3
Number pigs	20	20	20	20
Average initial weight	47.9	48.0	47.9	48.1
Average final weight	211.4	206.5	203.4	204.7
Average daily gain:				
To approx. 125 lb.	1.47	1.40	1.40	1.37
126 lb. to market weight	1.92	1.89	1.83	1.89
Total period	1.67	1.62	1.59	1.60
Average daily feed:				
To approx. 125 lb.	4.28	4.27	4.04	4.15
126 lb. to market weight	6.85	7.00	6.55	6.84
Total period	5.40	5.47	5.15	5.36
Feed/lb. gain:				
To approx. 125 lb.	2.91	3.04	2.87	3.02
126 lb. to market weight	3.57	3.70	3.58	3.63
Total period	3.24	3.38	3.24	3.34

TABLE 8. Effect of Level of Energy on Embryo Survival in Gilts

Ration treatment	Daily gain	Number embryos	Per cent survival
High energy	1.45	11.4	76
Low energy (alfalfa meal)	0.93	12.8	85
Low energy (ground snapped corn)	1.11	12.7	83

not true for the groups fed ground snapped corn during the entire period from weaning to market weight. These data would thus suggest that the use of ground snapped corn should be limited to the finishing phase of the growing-finishing period.

The Influence of Mycostatin on Fungi-Inoculated Pigs Fed High Levels of Aureomycin—R. H. O'Bannon, H. D. Wallace and G. E. Combs. Forty weanling pigs were used to study the influence of feeding mycostatin to fungi-inoculated pigs in the presence of high levels of aureomycin. The following statements are offered in summary:

(1) All antibiotic-fed groups gained slightly faster than the control group, but none of the differences were statistically significant. Feed conversion was excellent for all groups with no marked differences.

(2) Oral inoculations with Candida albicans and Candida tropicalis had no apparent effect on rate of gain or feed conversion.

TABLE 9. Effect of Temperature on Embryo Survival in Gilts

Group	Number embryos	Per cent survival
1-Control	12.5	77
2-Heat-Heat	9.4	64
3-Heat-Cool	14.1	88
4-Cool-Cool	12.8	86
5-Cool-Heat	11.2	75

(3) Candida albicans and Candida tropicalis were successfully cultured from the alimentary tract of pigs although the growth of the latter was limited.

(4) The presence of aureomycin appeared to enhance the growth of both organisms.

(5) Mycostatin reduced Candida albicans and Candida tropicalis populations in the alimentary tract of pigs.

The Effects of a New Antibiotic—Tylosin—on the Performance of Growing-Finishing Swine—R. H. O'Bannon, H. D. Wallace and G. E. Combs. Two experiments were conducted to evaluate the growth-promoting properties of tylosin, a new antibiotic, for growing-finishing swine.

The first experiment involving 75 pigs demonstrated the feasibility of using relatively low levels and reducing the level or withdrawing tylosin at 100 lb. liveweight. Levels of 20-10, 10-5 and 20-0 gm. per ton (first level reduced to second level at 100 lb. body weight) were slightly more effective than the 40-20 gm. level.

The second experiment involving 32 pigs demonstrated that tylosin and aureomycin were similarly effective while oleandomycin was slightly more effective than either tylosin or aureomycin for stimulating gains.

Effects of Cobalt-60 Irradiation on Animal Feedstuffs—G. E. Combs, J. P. Feaster and H. D. Wallace. Ration acceptance was not markedly influenced by including soybean meal irradiated at either $5x10^6$ or $1x10^6$ rep. in the rations of swine. The quantity of feed consumed by pigs fed a ration in which all ingredients had been irradiated ($1x10^6$ rep.) was also similar to that of pigs fed the non-irradiated ration. Rate and efficiency of gain were adversely affected by feeding the irradiated ($1x10^6$ rep.) feedstuffs.

Solutions and mixtures of urea with sucrose and dextrose exhibited a reduction in urea nitrogen when subjected to high levels of cobalt-60 radiation.

Further Observations on the Effect of Pre-Slaughter Feedings of Sucrose to Swine—A. Z. Palmer, H.

(Turn to SWINE DAY, page 71)

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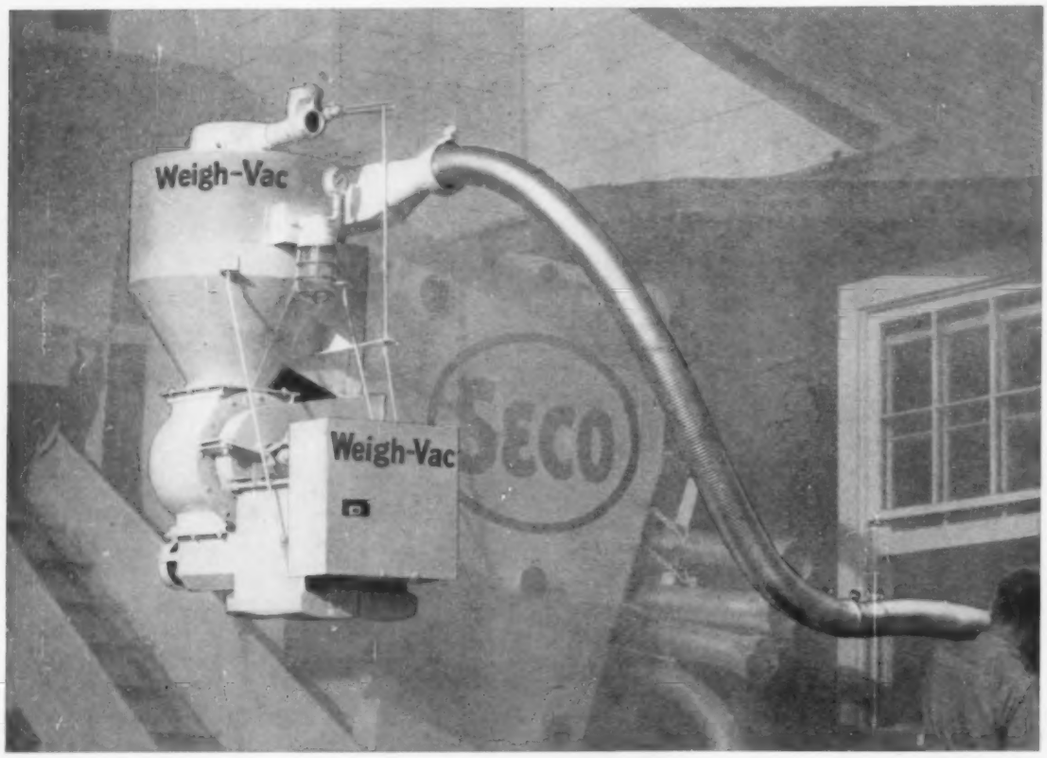

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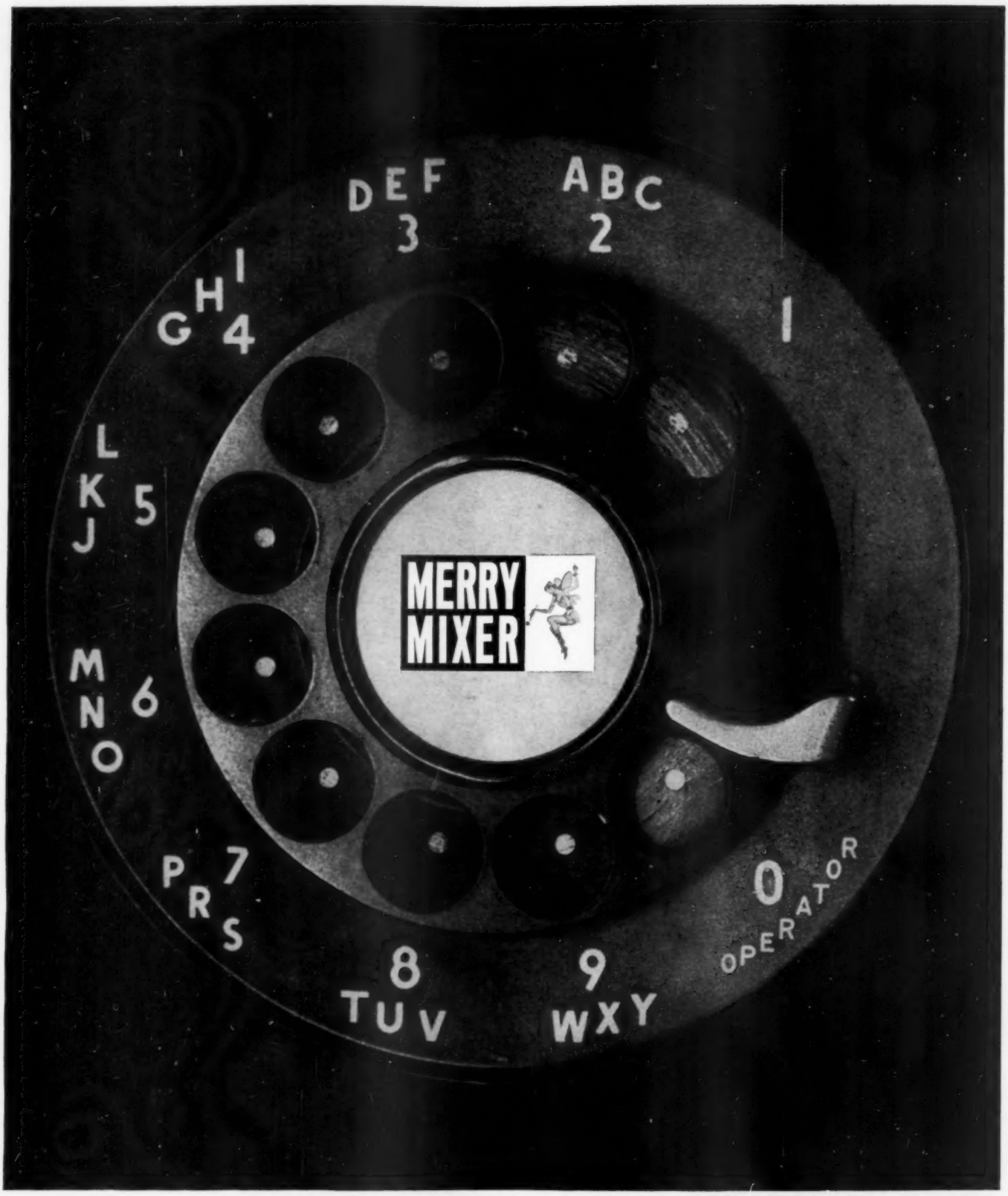

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Hog Feeding Still Looks Good for '62

AMES, IOWA — Even though the U.S. Department of Agriculture says lower hog prices and higher corn prices are expected to make the hog-corn ratio less favorable in 1961-62 than in the past year, hogs still hold the promise of being the most profitable livestock for 1962 in the Corn Belt.

Francis A. Kutish, Iowa State University agricultural economist, says only a moderate increase in hog production is anticipated for the coming year.

On Sept. 1, producers in the 10 main hog-raising states were planning to farrow about 2% more sows this fall than a year ago. They plan to boost farrowings by 4% during December through February, Mr. Kutish notes.

The number of sows farrowed during June through August was unchanged from a year ago. However, the number of pigs under 3 months of age on farms in the 10 main hog-producing states is up slightly because more pigs were saved.

Hog producers in the 10 main hog-raising states had 10% more pigs of 3 to 6 months of age on Sept. 1 than a year ago. These pigs will be coming to market the last few months of 1961 and in January, 1962. The heavier marketings during this period probably will set the fall's low price, Mr. Kutish says. He believes that winter prices should recover some after these hogs have moved off the market.

About 5% more late fall litters will be raised if producers follow their Sept. 1 plans. These pigs will come to market next spring. Since about 4% more farrowings are planned for December-February, he says that slaughter will be up slightly next spring and summer—with prices probably close to 1961 levels.

Offer Ag P. R. Course

PULLMAN, WASH.—A special course in agricultural public relations is on the program of the biennial Stockmen's Short Course, slated for Washington State University, Pullman, Dec. 11-15.

Dr. M. E. Ensminger, chairman of the WSU department of animal sciences, and host of the short course, said it is believed to be the first in agricultural public relations ever offered in the U.S.

Instruction will be in public relations philosophy, avenues and techniques, and public relations speaking and writing. A public relations handbook will be available at a cost of $2.

Lecturers in the course include Robert C. Liebenow, president of the Chicago Board of Trade; Robert A. Sandberg, author of three public speaking books and director of public affairs for Kaiser Aluminum Co., Oakland, Cal.; Dr. G. Burton Wood, head of the department of agricultural economics, Oregon State University, Corvallis, and John Ulrich, Spokane, Wash., public relations counsel.

Registration forms are available by writing to Dr. Ensminger, WSU, Pullman.

New South Dakota Mill Being Opened

WINNER, S.D.—The new $200,000 plant of Weaver Feed Mill here is going into full production, according to Derle Peiper, supervisor at the mill.

Mr. Peiper said that the new mill will be the only major specialized facility of its type in this area of South Dakota.

The plant capacity will be 100 tons per nine-hour shift, it was stated. There are nine bulk ingredient tanks at the plant; they have a capacity of 30,000 bu.

Owner of the plant is Chester Weaver.

FEED TRUCK COLLIDES

EL CAJON, CAL.—A feed truck collided with a fire truck at an intersection here. Three firemen were injured. William A. Mathew, 47, National City, was reportedly not injured.

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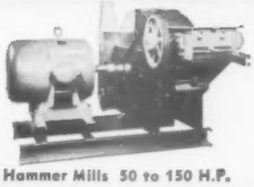
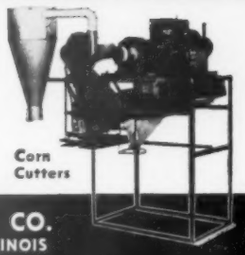


Hammer Mills 50 to 150 H.P.



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For customer satisfaction based on superior feed performance, offer feeds formulated with Polystat.

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Michigan Group Sets Convention

GRAND RAPIDS, MICH. — The Michigan Feed and Grain Dealers Assn. will have its annual convention Dec. 7-8 in Grand Rapids, a departure from past years when the convention has been held in Lansing or East Lansing. The convention will be in Grand Rapids this year in recognition of the importance of western Michigan to the feed industry of the state, and to lend variety to the location of the convention, according to officials.

The program will have Dean McNeal, executive vice president of the Pillsbury Co., Minneapolis, and chairman of the American Feed Manufacturers Assn., as speaker at the opening noon luncheon Dec. 7. Karl Scott, president of the Ford Motor Co. of Canada, will address dealers and their wives at a banquet that evening. Joseph Haspray, director of the Agricultural Stabilization and Conservation Service of the U.S. Department of Agriculture, Evanston, Ill., will review Commodity's role in the merchandising of grain at a Friday noon luncheon. Also scheduled to appear are Ron Kennedy, vice president of F. H. Peavey & Co., Minneapolis, and Howard Zindel, head of the poultry department, Michigan State University.

A trade show in connection with the convention has been sold out since early October.

The Michigan Feed and Grain Dealers convention is for representatives of the some 600 country elevator and feed stores of private, line and cooperative organizations of that state. Non-members may also attend.

NEW YORK STORES TO SELL SMOKED CHICKEN

ITHACA, N.Y. — Whole smoked chicken, a new food product from Cornell University, will be offered in Ithaca area stores.

Developed at the New York State College of Agriculture, the chicken is fully cooked and may be served either hot, by warming in an oven, or cold right out of the package.

The 3 to 3½ lb. broilers will be sufficient to serve a typical family, according to June Darfler, Cornell home economist. "The meat tastes something like smoked ham," she said.

The product will be packaged on a paper tray, and it will be wrapped with plastic film.

"The smoked chicken was developed to provide a convenience item and gourmet food for the busy housewife," Mrs. Darfler continued.

The product already has been tested in consumer preference surveys in the area. It was developed by a university committee working on new poultry products under the direction of Dr. Alice Briant, college of home economics; Dr. Robert C. Baker, poultry department, and Dr. Lawrence B. Darrah, agricultural economics department.

Arizona Grain, Seed Association to Meet

PHOENIX—The 7th annual gathering of the Arizona Grain and Seed Assn. will be Dec. 7 at 6 p.m. at the Hotel Westward Ho, Phoenix.

There will also be an association breakfast at 8 a.m. at the Phoenix Country Club. Tee-off time for golfers must be before 10 a.m.

The banquet in the evening is for golf players, non-players and wives.

Texas Plant Expands

FT. WORTH—Industrial Machinery Co., Inc., Ft. Worth, manufacturer of conveying and elevating equipment, has expanded its facilities with the addition of 12,000 sq. ft. through a lease arrangement. This is the first step in a streamlining of the entire production department, according to the company.

F. Dill Cole, president, said approximately 10,000 sq. ft. of the building will be utilized by machine shop operations, with the remaining 2,000 sq. ft. to be office space.

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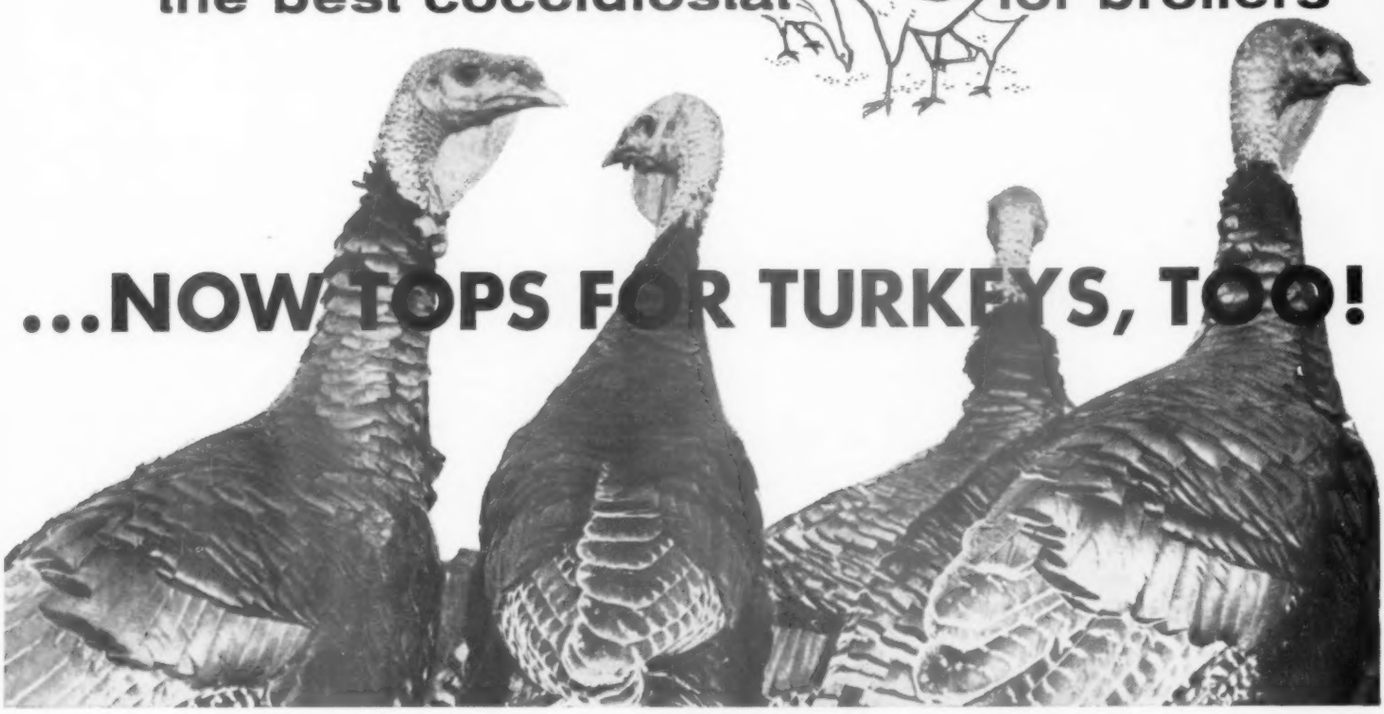

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AMPROL is highly effective against the three economically important coccidial species: *Eimeria adenoeides, E. gallopavonis* and *E. meleagrimitis.*

AMPROL is especially effective against mixed infections which are so common...and costly... in turkey flocks.

AMPROL allows satisfactory weight gains, with very favorable feed conversion ratios.

AMPROL, at a use-level of 0.0125%, helps prevent coccidiosis in a unique way by depriving coccidia of the thiamine they need to live. However, at this level AMPROL will usually permit the establishment of a *sound immunity.*

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AMPROL gives full coccidiostatic activity... coccidia have not been shown to develop resistance to this coccidiostat, yet it is well tolerated at many time the recommended use-level and is nontoxic to farm animals.

AMPROL has excellent blending properties... is easy to use in your mill.

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Are all dicalcium phosphates alike?

...not by a long shot!

Chemical solubility and biological feeding tests conducted by independent research laboratories have proved that "all defluorinated phosphates are not alike."

But are all dicalcium phosphates alike?

A comprehensive chemical and physical analytical study of Smith-Douglass DIKAL and two competitive products was recently concluded by Cox and Gillespie, Chemists and Chemical Engineers, Richmond, Va. Their report, covering analyses and comments, follows:

Comments by Cox and Gillespie

1) DIKAL as compared to Sample A:

a) The relatively high magnesia content of Sample A (3.56%) resulting in high magnesium phosphate and magnesium carbonate is not thought to be due to impurities in limestone, but to other magnesia which has been added to raise the phosphorus solubility. Unreacted calcium carbonate and magnesium carbonate are high.

b) DIKAL has a higher dicalcium phosphate content.

c) DIKAL has a lower apatitic phosphate content. Apatitic phosphates are highly insoluble.

d) DIKAL has a higher total phosphorus (phosphate) content.

e) The phosphate in DIKAL is more soluble.

f) The titration curve shows DIKAL to be buffered—therefore will retain its solubility.

g) DIKAL is "not loaded" with magnesia—its solubility is due to chemical processing. It contains very limited amounts of unreacted limestone or magnesia.

h) DIKAL is more uniform in granulation and it has a granule hardness more resistant to abrasion.

2) DIKAL as compared to Sample B:

a) Sample B has a high aluminum phosphate (6.44%) and an iron phosphate above that of DIKAL. The unreacted limestone (calcium carbonate) is much higher (10%). The total *calcium phosphates* (mono and di-) are much lower than DIKAL—62% in comparison with 71%. The apatitic content is higher.

b) Irrespective of the unfavorable chemical comparison between sample B and DIKAL—the physical comparison is more so. In every respect, Sample B is inferior . . . including an off color and odor. The acid insoluble shows much carbon.

c) The physical advantages of DIKAL are most apparent—odor, free flowing, hardness of granule, uniformity of particle.

d) DIKAL has a higher di-calcium phosphate content, is more soluble, has lower apatitic phosphate, and a higher total phosphorus and calcium.

e) DIKAL is lower in the impurity iron phosphate, and much lower in aluminum phosphate.

f) DIKAL is substantially lower in unreacted "limestone."

g) DIKAL has less "free carbon"—shown by color and acid insoluble.

In conclusion, DIKAL is significantly more soluble than competitive products tested. Conversely, DIKAL has one-third to one-half less insoluble phosphate.

Samples represent commercially available products and are designated in the same manner as in the recently published "Phosphorus Availabilities as determined by Assays conducted by the Lime Crest Research Laboratory, Newton, New Jersey" (copies available upon request).

	Competitive dicalcium phosphate A (produced from "electric furnace" phosphoric acid)	Competitive dicalcium phosphate B (produced from "wet process" phosphoric acid)	Smith-Douglass DIKAL
Dicalcium Phosphate, $CaHPO_4$	49.78%	49.43%	63.57%
Monocalcium Phosphate $Ca(H_2PO_4)_2$	9.68	12.51	7.33
Apatitic Calcium Phosphate*	1.31	1.07	.41
Calcium Carbonate $CaCO_3$	17.68	9.78	5.73
Magnesium Phosphate $Mg(H_2PO_4)_2$	13.46	4.09	3.98
Aluminum Phosphate $AlPO_4$	.02	6.44	2.54
Iron Phosphate (Ferric) $FePO_4$	.04	5.44	4.35
Disodium Phosphate NaH_2PO_4	Trace	.41	1.64
Magnesium Carbonate $MgCO_3$	2.29	.34	.18
Calcium Sulfate $CaSO_4\ 2H_2O$	Trace	7.16	7.07
Sodium Fluosilicate Na_2SiF_6	None	.03	.26
Calcium Fluoride CaF_2	.06	None	None
Sodium Chloride, NaCl	None	None	.04
Free Phosphoric Acid	.14	.12	.16
Unreacted Silica and Carbon	1.08	.70	1.21
Moisture and Water of Crystallization**	4.46	2.48	1.53
	100.00	100.00	100.00

*Apatite content is arbitrary and approximate.
**Water of crystallization is by difference.

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SMITH-DOUGLASS DIKAL

FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Minerals in Mixed Feeds

In this column on Aug. 5, under this same subject, I discussed a proposal to raise the "5% limit" as the base for requiring mineral guarantees where the total minerals added to a mixed feed exceeded this amount. With cage laying operations, as one example, the 5% added mineral level, according to proponents, is now unrealistic. Some such feeds require as much as 8% or even 10% added minerals. The present requirement (see paragraph (b) under resolution A, page 50, 1961 annual publication of the Association of American Feed Control Officials) automatically classifies such feeds as mineral supplements which, strictly speaking, they are not.

The subject was discussed by the Uniform Feed Bill and Regulations Committee of the Association of American Feed Control Officials. It has also been discussed at the annual meeting of the National Feed Ingredients Assn. The mineral feeds investigator for AAFCO, Henry DeSalvo of Arkansas, considered several suggestions in this regard.

Those proposing the idea naturally favored it. Those objecting, in the main, expressed the idea that if more than 5% added minerals were used in a feed the customer was entitled to a guarantee for calcium, phosphorus and salt. According to this view, this is worth-while information.

No Change Made

This subject came before the annual meeting in Washington of the AAFCO last month. Many companies are asking how minerals should now be guaranteed. The answer is, the same as always. No change was made.

One of the principal reasons for making no change at this time is that some state statutes have the 5% level as a part of their law. Guarantees are mandatory until these laws can be changed. In other words, even if the national association had modified this, the net effect would have been nil for companies doing business in several states. For example, a company doing business in West Virginia will find themselves required to make such guarantees. This is no reflection on this particular state law. It is simply a fact. Provisions similar to this throughout the country are so widespread it was realized if this change is to be made we must go about it in a different way.

Sentiment in favor of a change must first be crystallized. If this can be established, then the way to go about it will be to carefully study all of the state laws and find out wherein changes must be made and what and how these changes might be brought about.

Laws Are Detailed

In passing state laws there is the view that insists on writing as much detail as possible into the law. This is explained as necessary to avoid arbitrary decisions on the part of administrators or boards of control where laws are more flexible. The example just reviewed illustrates a point in the development of such a legal framework.

State laws with more general provisions, such as the Uniform State Feed Bill, make possible quick compliance with a change such as has been asked for here since the requirement is by regulation. Regulations can be changed more easily than a law.

This experience supports the view that a law administered by regulation is more amenable to change. In this fast moving age with drugs, food additives and computers, the ability of legislatures to move rapidly enough may present a real challenge. Everyone is aware of the possibility the Feed Label Study Committee may come up with a proposal which will confront every state with modification of its state law, not to mention the problem of modifying the Federal Food, Drug and Cosmetic Act. From past history one concludes amendments are slow in coming. This testifies either to the wisdom of those writing laws in the first place or to the reluctance to attack matters through legislature change.

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Feed Shipments Above Year Ago in Canada

WINNIPEG — Shipments of primary, concentrated feeds and secondary, complete feed in Canada were larger in August and the January-August period this year as compared to last, while shipments of all other animal feeds were smaller for both periods.

August totals: Primary, 41,063 tons compared to 34,991 a year earlier; secondary, 259,241, compared to 217,467; all others, 40,395, compared to 43,580.

January-August comparisons: Primary, 321,031 tons and 280,119; secondary, 1,879,784 and 1,638,139; all others, 317,813 and 351,541.

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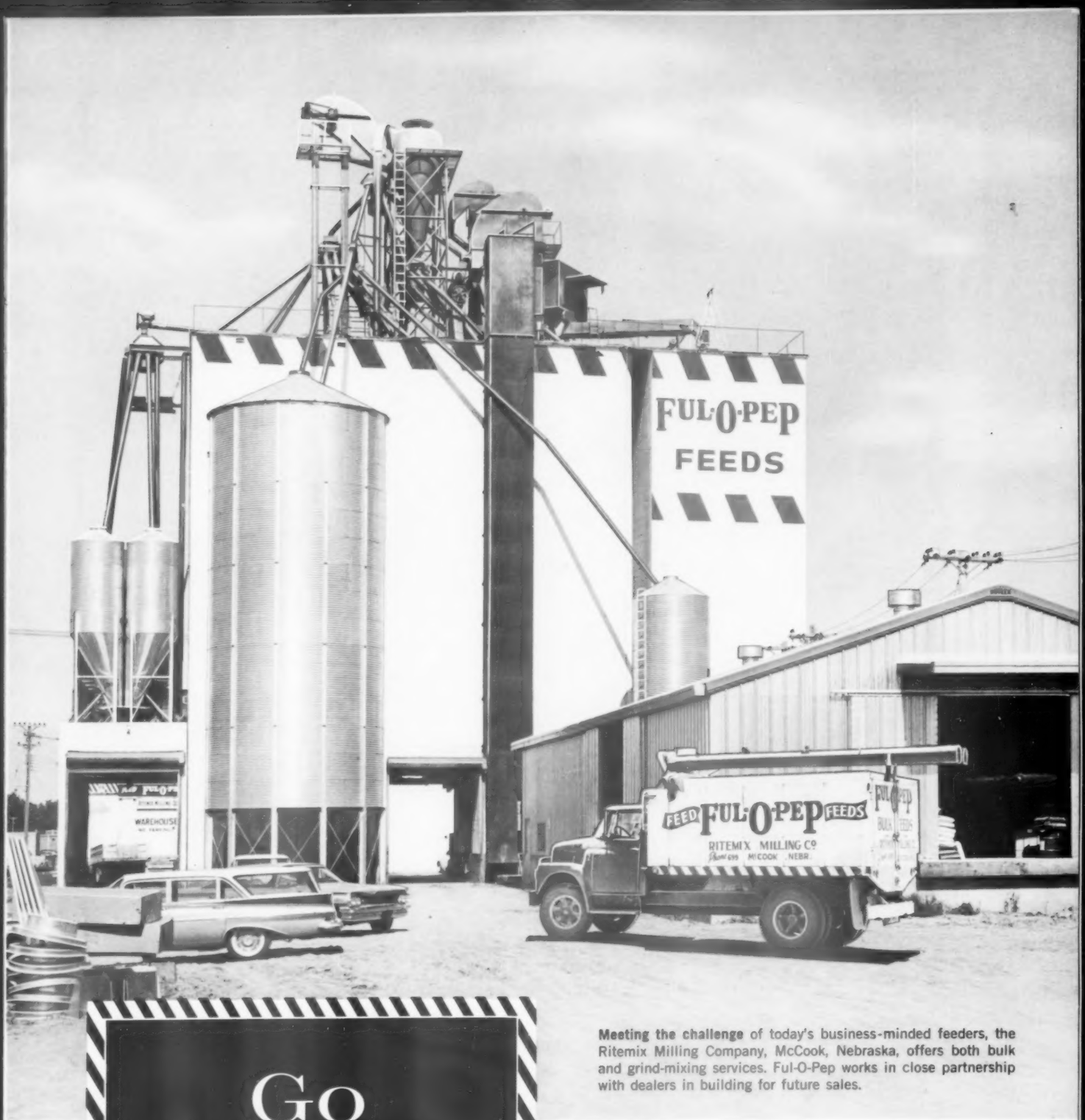
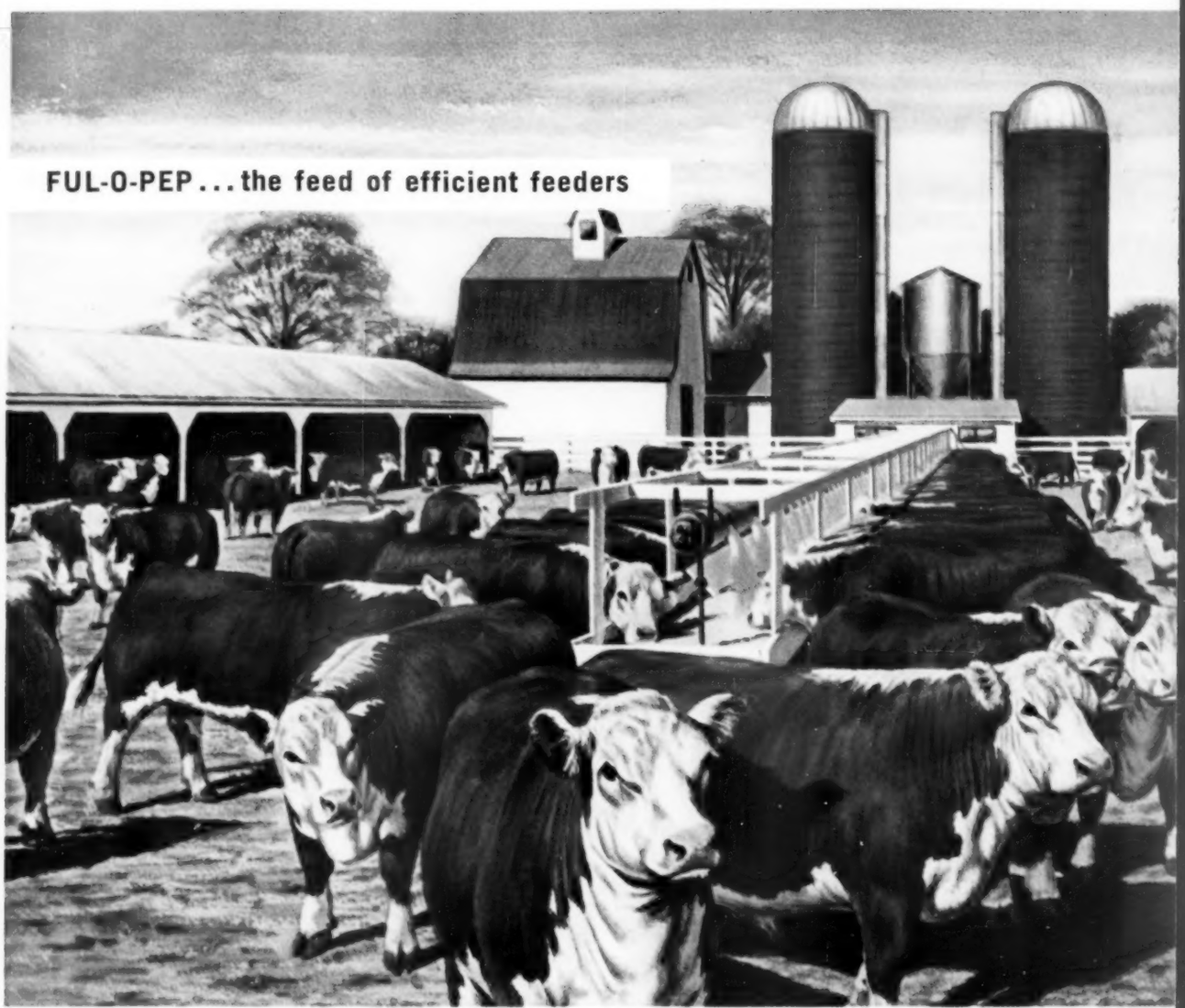


Meeting the challenge of today's business-minded feeders, the Ritemix Milling Company, McCook, Nebraska, offers both bulk and grind-mixing services. Ful-O-Pep works in close partnership with dealers in building for future sales.

Go and Grow with FUL-O-PEP

There are two big reasons why you can depend on Ful-O-Pep for sound future growth: (1) A complete line of research-built, farm-proved feeds, unsurpassed for feeding efficiency. (2) A complete and consistent program to help you meet today's demands for bulk, grind-mixing, and other services. Ful-O-Pep is your "partner in progress" in keeping you abreast of today's trends. Ful-O-Pep backs you all the way in serving the specific needs of today's efficiency-minded feeders.

MORE AND MORE EFFICIENT FEEDERS LOOK TO FUL-O-PEP

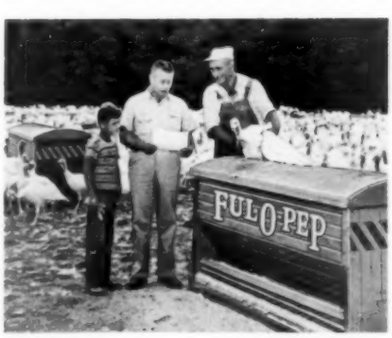


Ful-O-Pep helps you...

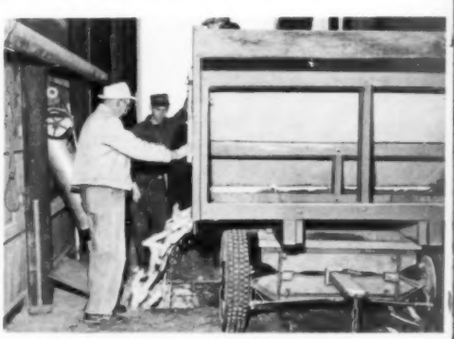
Meet today's need for

Your Ful-O-Pep dealer gives you more efficiency per dollar...

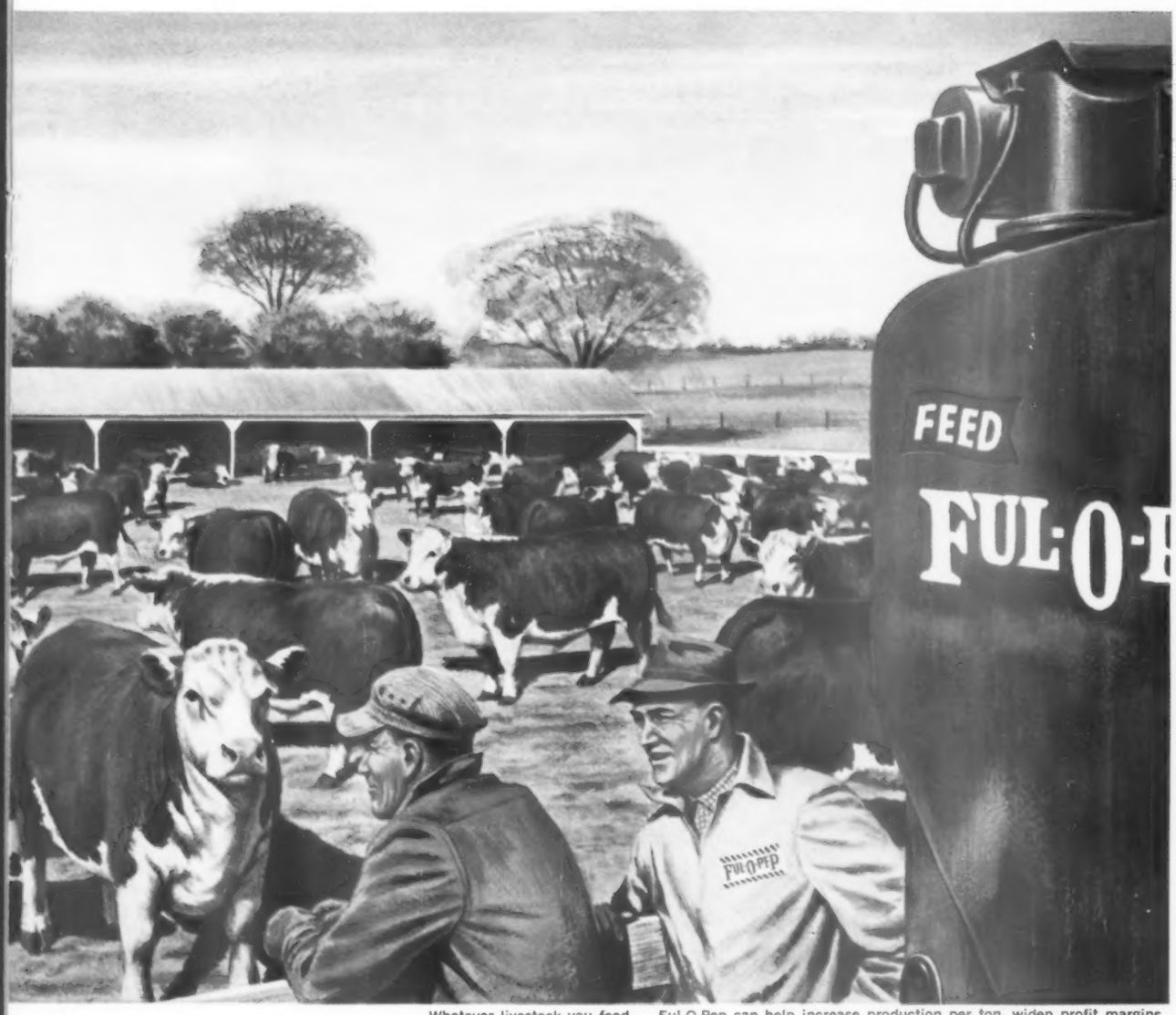
Efficient plans—Changes in livestock farming today call for many new and modern management practices. Backed by nationally-recognized authorities—your Ful-O-Pep dealer provides you approved, sound feeding plans.



Efficient feeds—Complete feeds, supplements, concentrates—whatever your need—your Ful-O-Pep dealer will gladly help figure your most economical feeding program. "Efficiency" and "economy" are his constant watchwords.



Efficient service—Your Ful-O-Pep dealer's business is to serve your business. Depending on local needs, he provides grinding, mixing, bulk, farm delivery, grain bank, etc. Call him for prompt service.



Whatever livestock you feed . . . Ful-O-Pep can help increase production per ton, widen profit margins.

higher feeding efficiency

Big goal of business-minded feeders today: Higher feeding efficiency. That's why more and more look to Ful-O-Pep . . . to help produce extra meat, milk or eggs *from every ton of feed.*

Records show feeder steers, for example, fed 112 days, took only 719 lbs. Ful-O-Pep to gain 100 lbs.—278 lbs. beef per ton of feed. A 10% less efficient feed would produce only 253 lbs. per ton—a 25-lb. profit margin for Ful-O-Pep.

Many Ful-O-Pep egg producers have reduced average pounds-feed-per-dozen from 4.1 to 3.7. Ful-O-Pep hog raisers have lowered feed conversion from 3.11 to 2.8 (10 weeks to market)—for 71 extra pounds pork per ton.

Ful-O-Pep's modern research leads the way in keeping you abreast of today's need for higher efficiency. Talk to your Ful-O-Pep dealer. You can be a more efficient feeder with Ful-O-Pep.

MADE AND BACKED BY THE QUAKER OATS COMPANY

FUL-O-PEP

FUL-O-PEP HELPS DEALERS BUILD FOR GROWTH

GO AND GROW WITH FUL-O-PEP!

"Feeders save money with bulk," says Fred Wacker, Jr., of the Ritemix Milling Company, McCook, Nebr., "so naturally more and more are putting in bulk handling equipment on farms. With our new facilities, we're equipped to serve their needs. We believe it gives us an edge on future sales." Above are some of the Ritemix bulk storage tanks... with a Ritemix delivery truck. "More and more efficient feeders are depending on Ful-O-Pep," Mr. Wacker added.

"Now... 10,000 tons

with Ful-O-Pep build-for-growth program!"

—Ritemix Milling Co., McCook, Nebr.

"We picked Quaker because it's 'growing' in the feed business," says Fred Wacker, Jr., president of Ritemix Milling Company, McCook, Nebr. "Ful-O-Pep cooperated fully with us in installing our bulk and grind-mix set-up... and is giving us every help in developing the territory.

"In about 2 years' time, our total tonnage has grown 178%," continued Mr. Wacker. "And we feel we're only just beginning. Our customers like the results they get with Ful-O-Pep. We like the way The Quaker Oats Company puts emphasis on sales growth. Quaker is a real Partner for Progress."

GO AND GROW WITH FUL-O-PEP! *Build for sales... build for growth with Ful-O-Pep. Write: Feed Sales Manager, The Quaker Oats Company, Merchandise Mart, Chicago 54, Illinois.*

Ful-O-Pep salesmen work with Ritemix in making calls on customers, and servicing feeders. Jack Blanke, Ful-O-Pep district representative, checks plans with Mr. Wacker, president of Ritemix.

Mixing equipment handles 14 tons per hour. Here, it's operated by Delmar Richardson, mill manager. Ritemix also has equipment for grinding, rolling and pelleting to service its customers.

"The national Ful-O-Pep 'tag' is something you can grow with," says Mr. Wacker. "Backed by Ful-O-Pep, we feel our modern feed-handling facilities are our best major investment."

FUL-O-PEP

MADE BY THE QUAKER OATS COMPANY

Group Veterinary Practices Proposed At Illinois Event

URBANA, ILL.—Group veterinary practice could revolutionize the role of today's practicing veterinarian and benefit the livestock owner.

So said Dr. J. F. Knappenberger, formerly a practicing veterinarian in Nebraska and now president of Haver-Lockhart Laboratories, Kansas City. He was speaking to the persons attending the University of Illinois Conference for Veterinarians held here recently.

Dr. Knappenberger's plan calls for each member of the group to specialize in one type of animal. The men would maintain their own mixed animal practices but would be free to consult with the specialist.

"Specialization is absolutely necessary," Dr. Knappenberger explained, "because the field of veterinary medicine is so broad that no man can possibly know everything."

Central Clinic

Each veterinarian would maintain his own office, but major work, such as surgery, would be performed at the central office and clinic. This office would be equipped with finer facilities than the individual veterinarian can afford, Dr. Knappenberger said, for the members of the group would consolidate their capital.

The clinic or hospital would house a diagnostic laboratory, a pharmacy and a business office with technologists trained to do this work. This would free the veterinarian to improve his ability through constant study, said the speaker.

Advantages of specialization and better facilities should not cost the livestock owner "any more than he pays today." In fact, he might pay less, according to Dr. Knappenberger.

The group practice plan was introduced as a possible measure against some of the ills of veterinary medicine. Physical demands of a practice are too great. Explained Dr. Knappenberger, "After ten years in the business, a veterinarian burns out—he can't take it any more."

Dr. Knappenberger believes the plan would also aid the profession in keeping up with integrated developments in agriculture.

The greatest problem would be the human element, the speaker said. The success of the plan would depend on the ability of individual veterinarians to work closely together, Dr. Knappenberger said.

CALIFORNIA FIRM SOLD

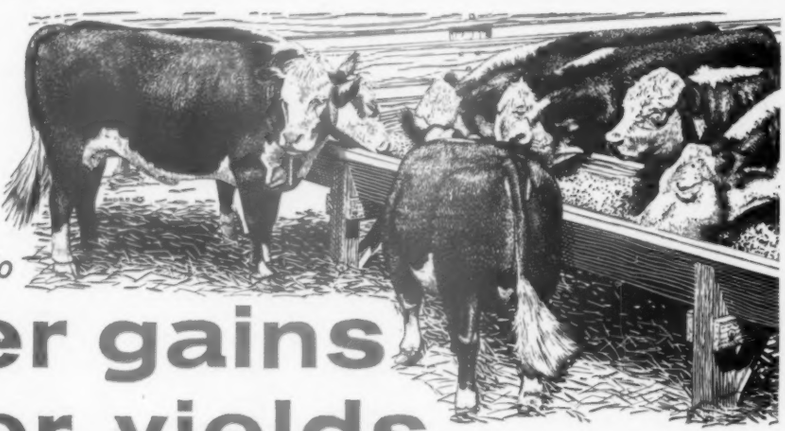
WALNUT CREEK, CAL. — Pacific Cement & Aggregate, Inc., has acquired Farmers Feed & Supply Co., Walnut Creek, and will continue the operation in the same location with present management in charge, according to R. K. Humphries, president of PCA. The company operated from 1913-1945 as a cooperative and changed to private ownership in 1945.

Texas Agricultural Experiment Station:

In several tests involving 36,300 chicks the substitution of up to .19% P from soft phosphate for an equal amount of P from defluorinated phosphate had no significant effect on either rate of gain or feed conversion. The slight difference obtained, however, was in favor of the combination.

SOFT PHOSPHATE, INC.
media, pennsylvania

A Natural, Research-Proven, Sensibly Priced Phosphate That Has Fortified More Than 100,000,000 Tons of Feed



Here's the key to

faster gains
better yields
greater profits

Gives you a 6 to 1 return on your investment!

Latest University Tests Again Prove the Value of Zymo-Pabst Enzyme Supplement In Cattle Feeds

UNIVERSITY	AVG. DAILY GAIN, LBS.		FEED EFFICIENCY	
	Control	Zymo-Pabst	Control	Zymo-Pabst
University No. 1	2.39	2.51	891	852
University No. 2	1.97	2.07	1550	1511
University No. 3	2.62	2.79	—	—
University No. 4	2.30	2.41	970	940
Average	2.32	2.45	1137	1101

Agreed! Enzymes are not alike!

ZYMO-PABST contains the guaranteed multiple enzyme activity that unlocks more beef from your feed!

ZYMO-PABST improves the utilization of feed nutrients, which results in faster gains, maximum feed savings, and a greater profit.

Results of 32 university and commercial feeding trials with ZYMO-PABST show improved gains and feed savings equal to a $6 return on every dollar invested in ZYMO-PABST. This is like finding an extra steer in every lot of 50 head at slaughter time!

Now is the time to get started on a new profit program with ZYMO-PABST. Write for more information today.

Animal Feed Department
PABST BREWING COMPANY
923 W. Juneau Avenue, Milwaukee 1, Wisconsin
TWX-MI 586 • Phone BRoadway 1-0230

Send me more facts about ZYMO-PABST including field test data.

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Address _____

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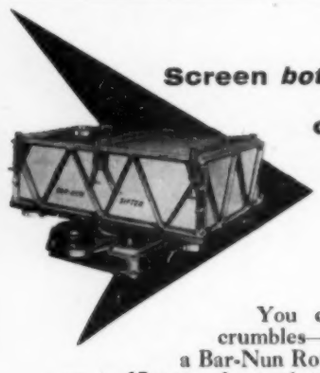
BARTLES & SHORES CHEMICAL COMPANY
KANSAS CITY 1, MISSOURI
WICHITA 2, KANSAS

KELL-PHOS
N. K. PARRISH, INC.
P.O. Box 1257
LUBBOCK, TEXAS

KELL-PHOS
THE HIGBEE-CARLIN COMPANY
20 West 9th Street Building
KANSAS CITY 5, MISSOURI

SEA-COLL
CLIFF C. DuBOIS & COMPANY
P.O. Box 1136
MASON CITY, IOWA

SOFT PHOSPHATE
Distributors for Iowa, Nebraska, Kansas and Missouri
Carroll Swanson Sales Co.
Box 1034, University Place Sta. Des Moines 11, Iowa
Tel. CR 9-8881



Screen *both* pellets and crumbles on *one* BAR-NUN with no screen changes and *no dusting*

You can screen both pellets and crumbles—without a screen change—on a Bar-Nun Rotary Sifter, at hourly capacities up to 17 tons of completely clean, accurate separations . . . over 20 tons of less complete separations. Bonus Bar-Nun advantages: no dusting; no vibration; less maintenance than required on other screens.

Over a period of time, one large producer of pellets and crumbles has installed eight Bar-Nuns of various capacities. That's convincing evidence of Bar-Nun values —in production efficiency and improved quality control. Write for Catalog 806.

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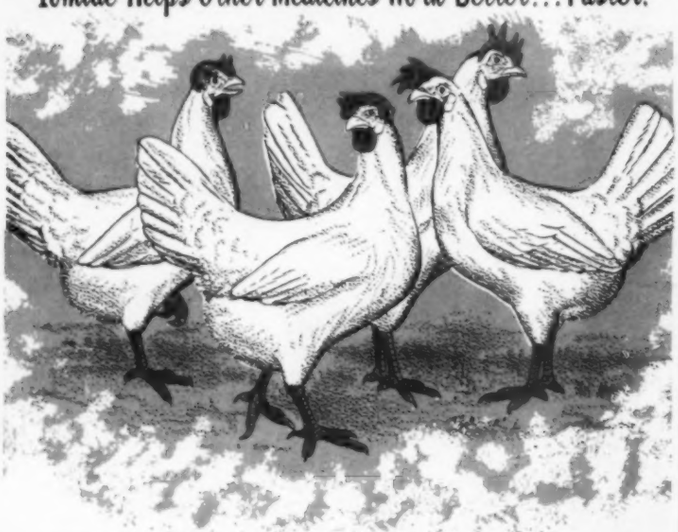
Iomide Helps Other Medicines Work Better... Faster!



Iomide Is a New Concept in the Treatment of Respiratory Disease

IOMIDE TREATS THE BIRD, NOT THE DISEASE—Gland-O-Lac's IOMIDE hastens the liquefaction and elimination of pus, mucus and other exudates that result from respiratory disease. Used with antibiotics or other drugs, IOMIDE offers a complete treatment—antibiotics kill the disease organisms... IOMIDE's systemic iodide therapy clears up after-effects of the disease. Danger of reinfection is reduced, high death and condemnation losses are avoided, birds regain health and normal rate of growth more quickly. Gland-O-Lac's IOMIDE is inexpensive, palatable, soluble in water and can be used in automatic watering systems. For full details on this new concept in treating respiratory diseases, write the Gland-O-Lac Company or see your Gland-O-Lac serviceman.

You can depend on

GLAND-O-LAC

for progress in medication!

The Gland-O-Lac Company...Omaha, Nebr.

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Dec. 13-15—Grain and Feed Management Conference; Kansas State University, Manhattan; Hugh J. McDonald, Extension Division, Waters Hall.

Dec. 16—Kansas Veterinary Nutrition Conference, Kansas State University, Manhattan; sponsored by K-State; Kansas Veterinary Medical Assn.; Midwest Feed Mfrs. Assn., and Kansas Formula Feed Manufacturers, Larry Younkin, Supersweet Feed, Salina, Kansas, president.

1962

Jan. 19-20—Florida State Poultry Producers Assn.; San Juan Hotel, Orlando; sec., Tom Chesnutt, P.O. Box 11236, St. Petersburg 33, Fla.

July 13-17—Georgia Feed Assn.; Tides Hotel, St. Petersburg, Fla.; sec., Will L. Kinard, Suite 210-3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Sept. 5-7—Cornell Nutrition Conference; Cornell University, Ithaca, N.Y.; chm., Dr. R. J. Young, Poultry Husbandry Dept.

Nov. 12-14—Feed Production School; Continental Hotel, Kansas City; pres., Lloyd S. Larson, Feed Production School, Inc., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 19-21—Western Grain & Feed Assn. of Iowa; Fort Des Moines Hotel, Des Moines, Iowa; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Nov. 30-Dec. 1—Dealers Nutrition Conference; University of Nebraska, Lincoln; Dr. P. L. Kelly, chm., Dairy Husbandry Dept.

Dec. 5-6—North Dakota Turkey Convention; Civic Center Auditorium, Fargo; sec., North Dakota Turkey Federation, Irving J. Mork, Box 2408, State University Station, Fargo.

Dec. 6-7—Missouri Poultry and American Poultry & Hatchery Federation Midwest Quickie Convention; Hotel Continental, Kansas City, Mo.; sec., Missouri Poultry Improvement Assn., E. M. Funk, Box 568, Columbia, Mo.

Dec. 7-8—Michigan Feed & Grain Dealers Assn.; Pantlind Hotel, Grand Rapids, Mich.; sec., Nevels Pearson, Box 472, East Lansing.

Dec. 7-8—North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh; chm., Dr. G. H. Wise, Animal Nutrition Section, Animal Industry Dept.

Dec. 8—Illinois Sheep Day; University of Illinois, Urbana; U.S. Garrigus, Animal Science Dept.

Dec. 11-15—Stockmen's Short Course; Washington State University, Pullman; Dr. M. E. Ensminger, chm., Animal Science Dept.

Dec. 13—American Society of Agricultural Engineers; Palmer House, Chicago; grain storage and feed processing session, cooperative program sponsored by ASAE and Grain Processing Machinery Manufacturers Assn.; sec., GPMMA, John Wessman, 400 W. Dartmouth Rd., Kansas City 13, Mo.

1962

Jan. 4-5—Minnesota Poultry Hatchery Assn.; Radisson Hotel, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

Jan. 8-9—Kansas Formula Feed Conference; Kansas State University, Manhattan; chm., Prof. T. B. Avery, Poultry Science Dept., West Waters Hall.

Jan. 9-11—National Turkey Federation; Memorial Auditorium, Dallas, Texas; co-headquarters hotels, Baker and Adolphus; sec., M. C. Small, Box 69, Mount Morris, Ill.

Jan. 21-23—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 21-24—Farmers Grain Dealers Association of North Dakota; Civic Memorial Auditorium, Fargo; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 23-27—New Jersey Farmers Week and Farm Show (Jan. 23-25); Trenton Armory; sec., Phillip Alampi, New Jersey Department of Agriculture, Trenton 25.

Jan. 28-30—Midwest Feed Manufacturers Assn.; Shamrock-Hilton Hotel, Houston, Texas; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

Jan. 29-31—Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 30-31—Illinois Agricultural Industries Forum; University of Illinois, Urbana, Ill.

Jan. 31—Louisiana Livestock Producers Day; Louisiana State University, Baton Rouge 3; chm., Dr. A. M. Mullins, Animal Industry Dept.

Jan. 31-Feb. 1—Illinois Nutrition

CALENDAR FOR 1961-62

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Conference; University of Illinois, Urbana; chm., Dr. Carl L. Davis, Dairy Science Dept.

Jan. 31 - Feb. 1 — New Hampshire Poultry Health Conference; University of New Hampshire, Durham; Richard Warren, Poultry Science Dept.

Feb. 1—Missouri Turkey Day; University of Missouri, Columbia; sec., Missouri Poultry Improvement Assn., E. M. Funk, Box 568, Columbia.

Feb. 1-2—Oregon Animal Industry Conference; Oregon State University, Corvallis, Ore.; co-sponsored by the Oregon Feed & Seed Dealers Assn. and Oregon State University; chm., Bill Eggimann, Dairy Cooperative Assn., 2613 S.E. 8th Ave., Portland.

Feb. 4-6—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 5-7—Association of Southern Agricultural Workers; Jacksonville, Fla.

Feb. 7-9 — American Dehydrators Assn.; Stardust Hotel, Las Vegas, Nev.; Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 9-11 — Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 67 E. Madison, Chicago 2, Ill.

Feb. 12 - 13 — Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 14-15—Pacific Northwest Feed Mill Production School; Benjamin Franklin Hotel, Seattle; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 15-16 — Utah Feed Manufacturers & Dealers Assn. Annual Nutrition Conference and Meeting; The Newhouse Hotel, Salt Lake City; sec., Dr. Lawrence Morris, Brigham Young University, Provo.

Feb. 16 — Washington State Feed Assn. annual convention; Benjamin Franklin Hotel, Seattle; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 18-20 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., George G. Greenleaf, P.O. Box 151, Worthington.

Feb. 20 - 21 — Virginia State Feed Convention and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; sec., Virginia State Feed Assn., J. Paul Williams, 615 E. Franklin St., Richmond 19, or Prof. Paul M. Reaves, Dairy Science Dept., Virginia Polytechnic Institute, Blacksburg.

Feb. 26 - March 1 — Colorado Livestock Days; Colorado State University, Fort Collins; chm., Dr. C. D. Story, head, Animal Science Dept.

March 2-3—Oklahoma Feed Industry Conference and Work Shop; Oklahoma State University, Stillwater; Dr. Rollin H. Thayer, chm., Poultry Science Dept.

March 4-6—Nebraska Grain & Feed Dealers Assn.; The Cornhusker Hotel, Lincoln; sec., Howard W. Elm, Terminal Bldg., Lincoln 8, Neb.

March 8 - 9 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Dept., University of Maryland, College Park.

March 13—Illinois Swine Growers Day; Univerity of Illinois, Urbana, Ill.

March 15-16—Oregon Feed & Seed Dealers Assn.; Sheraton Hotel, Portland; sec., Russ Hays, Lewis Bldg., Portland 4.

March 15-17 — Pacific Dairy and Poultry Assn.; Biltmore Hotel, Los Angeles, Cal.; sec., Lloyd J. Powers, 1304 E. 7th St., Los Angeles 21.

March 19-21—Poultry and Egg National Board; Palmer House, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

March 21-23—Grain & Feed Dealers National Assn.; Denver - Hilton Hotel, Denver, Colo.; Secretaries Circle meetings March 19-20; sec., Herbert L. Sharp, 401 Folger Bldg., 725 15th St. N.W., Washington, D.C.

March 25 - 30 — Grain Elevator & Processing Superintendents; Town House Motel, Omaha, Neb.; sec., Dean M. Clark, 1115 Board of Trade Bldg., Chicago 4, Ill.

March 28—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; Dr. Lawrence E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 28—Commercial Egg Clinic; Texas A&M College, College Station; B. C. Wormeli, Extension Poultry Husbandman.

April 9-10 — National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 10-12—Animal Health Institute; Statler-Hilton Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines 9, Iowa.

April 13 — Illinois Cattle Feeders

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The engineers and service men at Chick Master are confident they can help you improve your percentage of healthy, vigorous chicks from each hatch.

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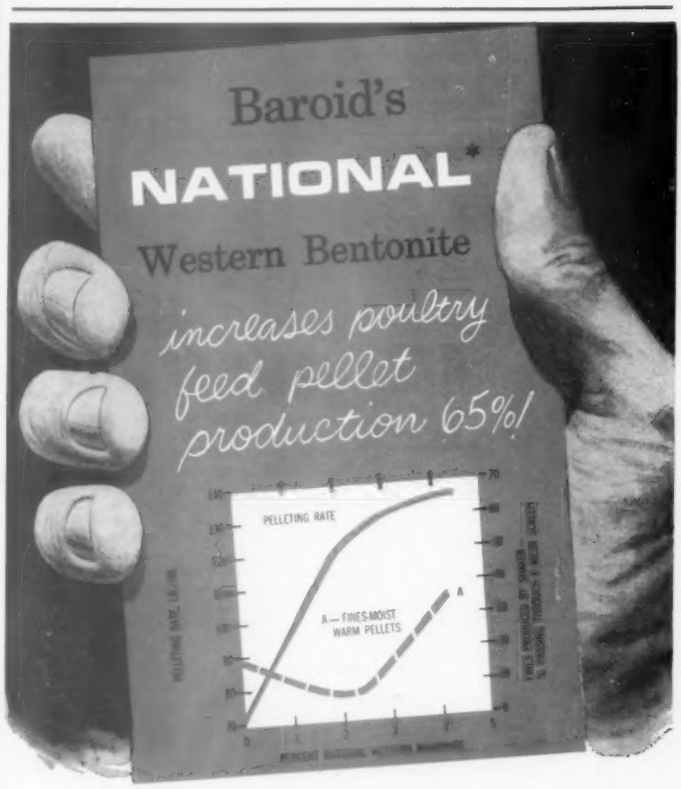

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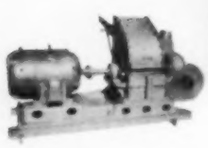

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April 26-28 — Texas Grain & Feed Assn.; Hotel Texas, Ft. Worth; sec., R. B. Bowden, 504 Ft. Worth Club Bldg., Ft. Worth 2.

April 26-28—California Hay, Grain & Feed Dealers Assn.; Biltmore Hotel, Los Angeles, Cal.; sec., Leo L. Johnson, 1400 10th St., Sacramento 14, Cal.

April 26-28—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 27 — Indiana Cattle Feeders Day; Purdue University, Lafayette; chm., Dr. W. M. Beeson, Animal Science Dept.

May 4 - 5 — Illinois Grain Dealers Assn.; St. Nicholas Hotel, Springfield, Ill.; exec. sec., Donald E. Palmer, 910 Lehmann Bldg., Peoria, Ill.

May 10-11 — Alabama Poultry Industry Assn. Convention and Poultry Jubilee; Dinkler - Tutwiler Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

May 10-13—American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 54.

May 27-28—Missouri Grain & Feed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 8 — Poultry Coronation Banquet; Dinkler Plaza Hotel, Atlanta, Ga.; sec., Abit Massey, Georgia Poultry Federation, Box 493, Gainesville.

June 28-30—Canadian Feed Manufacturers National Assn.; Sheraton Brock Hotel, Niagara Falls, Ontario, Canada; sec., Ontario Division, H. J. Willcock, 356 Eastern Ave., Toronto 8, Ontario.

July 17-19—American Poultry Congress & Exposition; St. Louis, Mo.; sec., American Poultry & Hatchery Federation, Don M. Turnbull, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 13-18 — 12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Socity, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Aug. 24—Purdue Swine Day; Purdue University, Lafayette, Ind.; chm., R. A. Pickett, Animal Science Dept.

Nov. 8 — Upper Peninsula Feed Dealers Assn.; State Office Bldg., Escanaba, Mich.; UPFDA, Box 342, Sault Ste. Marie.

Poultry Industry Help Alternatives Topic of South Carolina Meeting

COLUMBIA, S.C. — A state-wide meeting of the South Carolina Poultry Improvement Assn. has been called for Nov. 20 in Columbia for the purpose of informing the industry of the various programs, both government and industry sponsored, to improve poultry industry conditions.

The meeting, open to all segments of the indnustry, was called by J. D. Watson, Johnston, president. It will be at the Wade Hampton Hotel at 2 p.m.

Featured speakers will be Dr. James Ralph, assistant secretary of agriculture, and O. H. Green, Spartanburg, an opponent of government controls.

Federal marketing orders will be explained, and there will be a discussion of ways the industry might solve its problems through its own efforts, Mr. Watson said.

Norman Sanders, Columbia, a member of the executive committee of the association, and president of the Southeastern Poultry & Egg Assn., will briefly explain the purpose of the meeting.

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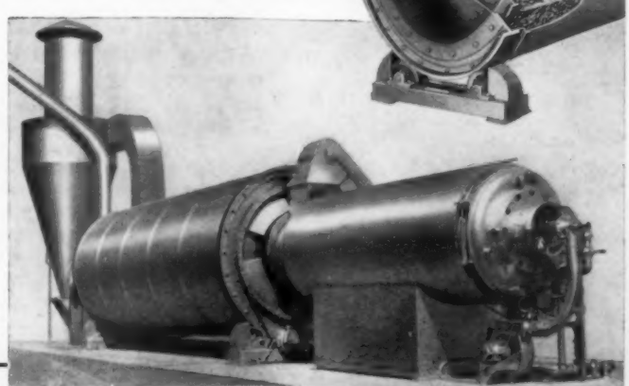

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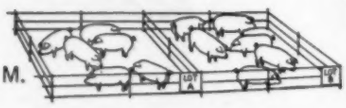

Effect of Hygromycin Fed to Swine Under Two Systems of Management

● A. J. Clawson, H. L. Miller, E. G. Batte, C. Z. McSwain and J. L. Rea, Jr., North Carolina Agricultural Experiment Station, Journal of Animal Science, Vol. 20, No. 3, pp. 537-543, August, 1961.

ABSTRACT

The objectives of this experiment were to:

(1) Study the effect of continuous feeding of hygromycin to sows during the latter part of gestation and early lactation on their reproductive performance and on livability of their offspring when raised either in confinement or on pasture.

(2) Study the effect of continuous feeding of hygromycin in starting and growing rations (to a weight of approximately 100 lb.) on growth, feed requirements, liver scars caused by ascarids and numbers of ascarids harbored by market hogs.

EXPERIMENT 1— A total of 38 second-litter sows were used during two fall seasons with the sows maintained on Ladino clover pasture during gestation. During this time they were fed 3 lb. daily of the following ration: 73.75% ground shelled corn; 12½% soybean meal; 6¼% dehyrated alfalfa meal; 6¼% meat scraps; .44% ground limestone; 0.37% defluorinated phosphate, and 0.44% salt.

Thirty days prior to farrowing, one-half of the sows were continued on 3 lb. daily of the control ration above. The remainder were fed 3 lb. daily of a similar ration to which hygromycin had been added at the rate of 16 mg. per pound which provided a total of 48 mg. per sow per day. This level was fed during the 30 days prior to and for 21 days after farrowing.

Approximately three weeks after farrowing, the sows and their litters in each group were divided and placed either on Ladino clover-fescue pasture or in pens with concrete floors. The pasture consisted of lots which had been used only once two years previously, and the concrete feeding platform was new. The pasture pigs were housed in open-front sheds similar to those used on the concrete platforms except that they had dirt floors. No bedding was used in either group.

Creep feeds were similar for both groups of young pigs with the exception that pigs from sows that received hygromycin also received it in their creep ration at the rate of 12 mg. per ton of ration. Sows were handled similarly as far as feeding practices were concerned with both groups self-fed corn and supplement after being moved from the farrowing barn.

At weaning, four lots of pigs were maintained, but they were redivided so that one half of the pigs raised on concrete during the pre-weaning period were placed on pasture and one half of the pasture-fed pigs were placed on concrete. This was done with both the control and hygromycin groups. After weaning, hygromycin feeding was continued for those pigs whose dams had received the additive. As mentioned above, these same pigs also had received hygromycin in their starter ration.

The ration fed the pigs was the same as that used for feeding sows and litters during lactation and consisted of shelled corn and supplement fed free-choice. Hygromycin was added to the supplement at the rate of 48 gm./ton for those pigs that received the antibiotic. Such hygromycin feeding was continued until the pigs averaged approximately 100 lb. liveweight.

The results showed that in spite of the fact that the average number of pigs farrowed per litter was greater for the hygromycin fed sows (10.1 vs. 9.2) this figure was not a result of hygromycin feeding itself, but rather was due to litter size variation. Average birth weight tended to be somewhat smaller for hygromycin fed sows (2.6 vs. 2.75). Starter consumption was higher for the control pigs fed both on concrete and on pasture and markedly so during the first season. Thus, hygromycin apparently reduced the palatability of the starter ration, although part of this difference may have been associated with litter size. It should be noted

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that average litter weight and average weight per pig at weaning were not influenced significantly by treatments. Likewise, percent of pigs weaned of those farrowed did not appear to be associated with hygromycin feeding or with confinement vs. pasture feeding.

The feed saving resulting from use of pasture vs. confinement was small up to the time of weaning and averaged 35 lb. of feed saved per hundredweight gain per sow and litter. During the first year, those sows fed a corn-tankage ration free choice on concrete apparently had satisfactory milk production but did not gain, while the sows on pasture gained an average of 40 lb. each. In both years, the protein supplement consumption by the sows and litters when fed free choice during lactation was high and may have resulted, at least in part, from supplement consumption by the young pigs.

During post-weaning period, pigs fed hygromycin and those fed on pasture consumed less feed than pigs fed the control ration and those fed on concrete. Because of group feeding techniques, statistical analysis could not be used. This lower feed intake was reflected in slightly lower average daily gains for pigs receiving hygromycin and for those fed on pasture. The lower feed consumption for groups previously fed hygromycin persisted to market weight.

The pigs fed on pasture required less feed per 100 lb. gain than those fed on concrete, and this advantage was manifest even though the protein supplement fed to both groups was well fortified with known required vitamins and minerals.

In spite of the fact that hygromycin feeding was discontinued at approximately 100 lb. weight, the intestinal tracts of the pigs so fed contained fewer ascarids at market weight than did controls. Average numbers of ascarids recovered was 15 and 4, respectively. It is interesting to note that although there was a reduction in liver scars in the pigs during the first year for pigs fed hygromycin, exactly the opposite was true the following year. The results of this experiment show that ridding the growing pig of mature ascarids does not improve his performance since liver damage may occur before treatment is started or else the drug employed may not be effective in preventing the ascarid larva from making its migratory cycle to the liver and lungs and causing resultant damage. Pigs with high liver scars usually perform poorer than those relatively free of damage.

Carcass traits, backfat thickness, area of loin eye, etc., were unaffected by ration treatment. No detrimental effect was noted on carcass quality as a result of feeding on concrete in spite of the more limited exercise area available.

EXPERIMENT 2—In this trial, 134 10-week-old pigs (45 lb. average weight) which had previously received hygromycin in their creep rations were used. The pigs were divided into two groups and fed rations comprised of a mixture of corn, milo and protein supplement to calculate 16% total protein until approximately 75 lb. liveweight. One half of the pigs were fed hygromycin in their rations until 125 lb. weight. From 75 to 125 lb. weight, all pigs were fed a 14% total protein ration, and from 125 lb. to approximately 190 lb. final weight they were fed 12% total protein. Yellow corn replaced all of the milo at 75 lb. weight.

The rations were all self-fed and two rape pastures were used. The results showed that in this trial there were no differences in daily feed intake, rate of gain or feed per pound of gain associated with treatments. The pigs fed hygromycin post weaning harbored significantly fewer mature ascarids at market time than pigs fed the control diet (average 1.8 and 5.5 ascarids, respectively). Thus, it was apparent that merely feeding the hygromycin in the creep ration was not effective in prevention of ascarid invasion at a later date. No difference was observed in number of liver scars in this trial at time of slaughter. It should be noted, however, that after the hygromycin supplemented pigs had been on trial for 46 days, an apparent impairment in their hearing was noticed. This lack of normal hearing appeared to persist even after hygromycin feeding was discontinued, but no further tests were made to determine whether or not the pigs were actually deaf.

The data for liver scars and daily gains from pigs in Experiments 1 and 2 were combined to obtain correlation coefficients. This correlation (−0.25) involving 360 observations was highly significant ($P < 0.01$).

COMMENT

There have been experiments concerning the use of hygromycin in hog rations during the past several years, and space does not permit a review of them. Nevertheless, the North Carolina trial above reviewed is quite complete and well controlled and is an exhibit of what one may expect under normal conditions of good swine management and husbandry. Certain other investigators have observed gain responses when pigs have received hygromycin, but in general, these have been exhibited only up to approximately 100 lb. weight. After this, there is often a growth depression by the use of the additive. Furthermore, contaminated surroundings probably would give better results when the compound is used than when a relatively clean parasite-free environment is present.

Although periodic reports have been made in the field of apparent deafness of hogs fed hygromycin, it should be noted that the performance of pigs apparently was not adversely affected by this condition.

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WALTHAM, MASS.—A dealer training program for dairy and poultry feeds and concentrates salesmen is being conducted through December by Wirthmore Feeds, Inc., Waltham, under the direction of M. C. Devereux, newly appointed division sales manager. The program consists of one-day meetings with dealer groups in Ohio, Michigan and Virginia.

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Minnesota Beef Cattle Research Reports

By Dr. O. E. Kolari
University of Minnesota
St. Paul

The 10th anniversary of the Minnesota Beef Cattle - Grassland Field Day was observed recently at the Rosemount (Minn.) Agricultural Experiment Station.

As part of the observance highlights of past research were summarized by members of the departments of animal husbandry, soils, agronomy, entomology and forestry. Results obtained during the past year were presented and included the following:

- The use of "Baytex" for grub control resulted in 90% reduction in grubs when applied on wintering calves.
- Weight gains of yearling steers fed high - corn silage, restricted - grain were not affected by the level of linseed oil meal fed. The level varied from 1.5 to 3 lb. per head daily. On the other hand, 1.5 lb. linseed oil meal was not adequate for heifers fed similar rations, and gains were increased when the level was increased to 2 lb. per head daily.
- Lysine, fed at 10 gm. per head daily, had no effect on the feedlot performance of steers and heifers fed high-corn silage rations.
- Approximately 3.2 and 5.4 lb. supplemental shelled corn per head daily were required by calves fed regular-cut corn silage and forage sorghum silage, respectively, to equal the feedlot performance of calves fed high-cut corn silage and no corn.
- Differences in the feedlot performance and carcass characteristics of steers fed either ground shelled corn or ground ear corn were small.
- Vitamin A deficiency symptoms were observed in cattle fed a ration of ground ear corn, protein supplement and no hay after about 120 days on feed.
- Weight gains of heifers fed either 4, 6 or 8 lb. hay with shelled corn were similar.
- Carcass grades and marbling scores of carcasses from cattle fed 4 or 6 lb. hay were similar and were higher than those from heifers fed 8 lb. per head daily.
- Differences in the feedlot performance of steers fed rolled dry barley or high-moisture ensiled barley rations were small.
- The fineness of grind (⅛, ¼ or ½ in. screen) of hay subsequently pelleted and fed with ground shelled corn had no effect on the feedlot performance of fattening calves.
- Treating pasture cattle with cobalt "bullets" increased weight gains and beef produced per acre by 6.6%.
- Beef production per acre was increased 80% as a result of fertilizing grass pastures; renovation of pastures increased beef production by 125%.

Following are summaries of the reports given:

FEEDING FOUR LEVELS OF LINSEED OIL MEAL AND LYSINE TO FATTENING CATTLE FED HIGH-CORN SILAGE RATIONS — O. E. Kolari, A. L. Harvey and J. C. Meiske—Two experiments were completed in which four levels of protein, with and without lysine, were fed to 64 yearling steers and 64 heifers. Linseed oil meal was fed at 1.5, 2.0, 2.5 or 3.0 lb. per head daily to each group of two lots of cattle (eight per lot) in each trial. Lysine was fed at 10 gm. per head daily. Corn silage was fed to appetite during the first 74 and 111 days of the steer and heifer trials, respectively. During this phase of feeding, the combined intake of ground ear corn and linseed oil meal was about 8 lb. per head daily.

Results: The average daily gains of steers were similar for all levels of linseed oil meal fed (2.58 to 2.69 lb.). Heifers fed 1.5 lb. linseed oil meal gained 0.13 to 0.22 lb. less per head daily (1.83 lb.) than those fed 2 (2.05 lb.), 2.5 (2.02 lb.) or 3 lb. (1.96 lb.) per head daily. In both trials the daily intake of feed by cattle fed 1.5 lb. linseed oil meal was slightly less than that of cattle fed 2 to 3 lb. Feed required per unit weight gain (within trials) was the least for steers fed 1.5 lb. and for heifers fed 2 lb. linseed oil meal per head daily. Differences in the efficiency of feed use between cattle fed the other three levels of linseed oil meal were small. Feed costs per cwt. gain were low in both trials and ranged from $12 to $13.48. The most economical gains, within trials, were made by steers fed 1.5 lb. linseed oil meal ($12.20) and heifers fed 2 lb. linseed oil meal ($12). In both trials, cattle fed 3 lb. linseed oil meal per head daily had the highest feed cost ($13.48 and $13.01 for steers and heifers, respectively). Feeding 10 gm. lysine per head daily had no effect on the feedlot performance of the cattle.

WINTERING STEER CALVES ON REGULAR CORN SILAGE, HIGH-CUT CORN SILAGE OR FORAGE SORGHUM SILAGE—J. C. Meiske, A. L. Harvey, O. E. Kolari and L. H. Smith—Forty-eight "good-to-choice" Hereford steer calves, weighing about 405 lb., were allotted into six lots of eight each. Two lots of cattle were fed each of the fol-

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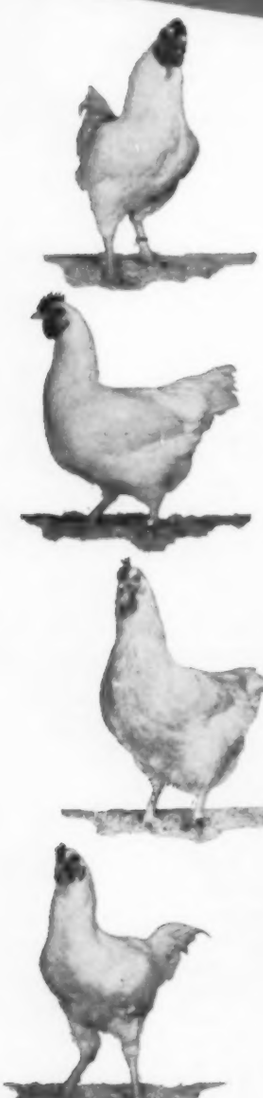

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lowing silages: (1) high-cut corn silage (cut so that 18 to 24 in. of stubble was left in the field); (2) regular-cut corn silage; (3) forage sorghum silage. Rations consisted of silage fed to appetite, 1 lb. soybean meal and 2 lb. alfalfa-brome hay. A trace mineralized salt and a mineral mixture were fed free-choice. The calves were implanted with 12 mg. stilbestrol at the start of the 191 day trial. Cracked shelled corn was fed to calves fed the lower energy silages (sorghum and regular-cut) in order to obtain an equal rate of gain between silage treatments.

Results: Average daily gains of cattle fed high-cut corn silage (1.66 lb.), regular-cut corn silage (1.76 lb.) or forage sorghum silage (1.77 lb.) were similar. Calves fed regular-cut corn or sorghum silage required 3.20 and 5.37 lb., respectively, of supplemental cracked shelled corn per head daily to produce weight gains equivalent to that of calves fed high-cut corn silage. Calves fed regular-cut corn silage and forage sorghum silage required 6% (687 lb.) and 11% (717 lb.) more moisture-free feed per cwt. gain, respectively, than calves fed high-cut corn silage (647 lb.). Feed cost per cwt. gain ranged from $11.19 for calves fed high-cut corn silage to $13.03 for those fed sorghum silage. The feed cost of calves fed regular-cut corn silage was $11.63 per cwt. gain.

THE EFFECT OF FEEDING VARIOUS LEVELS OF ENERGY UPON FEEDLOT PERFORMANCE AND CARCASS CHARACTERISTICS OF FATTENING STEERS—W. J. Aunan, A. L. Harvey, O. E. Kolari and J. C. Meiske—Thirty-six "good-to-choice" yearling Hereford steers were allotted into six lots of six. Two lots were randomly assigned to each of the following treatments: (1) ground ear corn and hay; (2) ground ear corn and no hay; (3) cracked shelled corn and hay. Corn was fed to appetite and alfalfa-brome hay (average quality) was fed at 4 lb. per head daily to the 4 lots of steers receiving hay. Daily crude protein intake of cattle was equalized between rations with soybean meal to meet recommendations of NRC. The cattle were individually fed in stanchions for 153 days.

Results: The differences in average daily gains of cattle fed cracked shelled corn with hay (2.47 lb.) or ground ear corn with hay (2.56 lb.) were small. Cattle fed shelled corn and hay required 5% less feed per cwt. gain than those fed ear corn and hay (842 vs. 886 lb.). The average daily gain of steers fed ground ear corn with no hay was 2.15 lb. They required 836 lb. feed per cwt. gain.

The weight gains of the steers fed ground ear corn and no hay were similar to cattle fed hay during the first 106 days on feed. However, their average daily gains were subnormal (1.29 lb.) from the 106th to 153rd day of the trial; this was apparently due to a vitamin A deficiency (see "Vitamin A Studies with Beef Cattle"). The weight gains of steers fed either shelled or ear corn with alfalfa-brome hay were satisfactory during the last 47 days on feed.

Margin over feed costs was the least for cattle fed ground ear corn and no hay (loss of $12.30), highest for cattle fed ground ear corn and hay (loss of $2.28), and intermediate for those fed cracked shelled corn and hay (loss of $8.27). Analyses of carcass data showed no significant differences between treatments for carcass weight, USDA grade, marbling score, conformation score, rib eye area, fat thickness over the 12th rib, and separable fat tissue, separable lean tissue and moisture, fat and protein content of the 9-11th rib sample. Also, there were no apparent differences between treatments in color and firmness scores.

VITAMIN A STUDIES WITH BEEF CATTLE—O. E. Kolari, A. L. Harvey and J. C. Meiske—Three experiments were completed in which vitamin A was fed in massive doses to fattening beef cattle.

Experiment 1—Forty-six "good-to-choice" heifers were divided into six lots (two lots per hay level) and fed three levels of hay: 4, 6 or 8 lb. alfalfa-brome hay per head daily. Vitamin A was fed at 100,000 I.U. per head daily for five days beginning June 2 and again Aug. 3, 1960, to one lot of heifers within each hay level. Ground shelled corn was fed to appetite and the crude protein intake of the cattle was equalized among hay levels with linseed oil meal. Prior to this experiment the heifers had been fed high-corn silage rations for 106 days. The feeding of additional vitamin A did not affect feedlot performance in this experiment.

Experiment 2—Three steers within

EDITOR'S NOTE: This report by Dr. O. E. Kolari on the Minnesota Beef Cattle-Grassland Field Day is paper No. 1093, Miscellaneous Journal Series, Minnesota Agricultural Experiment Station.

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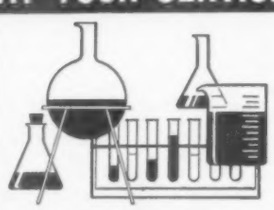

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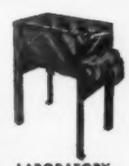

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each lot reported in "The Effect of Feeding Various Levels of Energy Upon Feedlot Performance and Carcass Characteristics of Fattening Steers" were fed 100,000 I.U. vitamin A per head daily for five days beginning May 24 and again Aug. 3, 1960. Liver samples were taken from the steers for vitamin A and carotene determination after they were slaughtered. The experiment was terminated after the cattle had been on feed for 153 days (Oct. 24, 1960).

The feeding of supplemental vitamin A, as was done in this experiment, did not affect the feedlot performance of the steers. After 120 days on feed some of the steers fed rations without hay showed symptoms of vitamin A deficiency whether or not they had been fed supplemental vitamin A. Symptoms observed included: Reduced appetite, dull hair coat, diarrhea, muscular incoordination and swelling of the legs above the hoofheads. Steers with swollen legs were injected with 500,000 I.U. vitamin A and the swelling disappeared in 7-10 days. During the last 47 days of the experiment the steers fed no hay gained only 1.29 lb. per head daily. Steers fed hay gained slightly over 2 lb. per day. These results show that the ration without hay (ear corn and soybean meal) did not supply enough vitamin A activity to meet the vitamin A requirements and that the supplemental level of vitamin A fed was inadequate also.

The carotene and vitamin A contents of the livers of cattle fed ear corn and no hay were extremely low (control—6.7 and 3.7; vitamin A group—6.9 and 2.9 mcg.%, respectively). Steers fed ear corn and hay had the highest liver carotene and vitamin A values (control—21.5 and 44.2; vitamin A group—21.8 and 46.8 mcg.%, respectively), and those fed shelled corn and hay had intermediate values (control—17.9 and 22.7; vitamin A group—14.1 and 28.3 mcg.%, respectively). These data confirmed the feedlot observation of vitamin A deficiency in steers fed ground ear corn and no hay.

Experiment 3—One half of the heifers in each lot reported in "Feeding Four Levels of Linseed Oil Meal and Lysine to Fattening Cattle Fed High-Corn Silage Rations" were fed 700,000 I.U. vitamin A Feb. 25, shortly after arrival in the feedlot and 500,000 I.U. March 30, 1961. The trial was terminated June 28, 1961 (118 days). Under these conditions the feeding of supplemental vitamin A did not affect feedlot performance.

THE EFFECT OF FEEDING FOUR LEVELS OF HAY TO FATTENING HEIFERS FED SHELLED CORN—O. E. Kolari, A. L. Harvey, J. C. Meiske and W. J. Aunan—Sixty-four Hereford heifers were allotted to eight lots (two per hay level) and fed: 2, 4, 6 or 8 lb. alfalfa-brome hay per head daily. Cracked shelled corn was fed to appetite and the daily crude protein intake of the cattle fed the various hay levels was equalized with linseed oil meal. The heifers were implanted with 12 mg. stilbestrol at the start of the trial. Trace mineralized salt and a mineral mixture were fed free-choice.

Preliminary results: During the first 71 days on feed the average daily gain of heifers fed 2 lb. alfalfa-brome hay per head daily (2.53 lb.) was 9-11% greater than for those fed 4 lb. (2.29 lb.), 6 lb. (2.24 lb.) or 8 lb. (2.29 lb.) hay. The daily intake of feed was highest for heifers fed 8 lb. alfalfa-brome hay per head daily (21.5 lb.) and least for heifers fed 2 lb. hay (19.0 lb.). Heifers fed 4 or 6 lb. hay had similar daily feed intakes. Feed required per 100 lb. gain was the least for heifers fed 2 lb. hay (744 lb.). Heifers fed 4, 6 or 8 lb. hay required 18 (880 lb.), 22 (905 lb.) and 25% (933 lb.), respectively, more feed per 100 lb. gain than those fed 2 lb. hay.

Final results of a 116-day experiment completed in 1960 were reported in which three levels of alfalfa-brome hay (4, 6 and 8 lb.), were fed to fattening heifers. Rations were similar to those reported above. Average daily gains of heifers fed 4 (2.05 lb.), 6 (2.00 lb.) and 8 lb. hay (2.10 lb.) were similar. Fat cover over the 12th rib and rib eye area (inches), marbling scores (5, small and 6, modest) and carcass grades (9, high good and 10, low choice) of the carcasses from cattle fed the various hay levels were, respectively: 4 lb. hay—0.81, 11.2, 5.8, 10.2; 6 lb. hay—0.79, 11.1, 5.6, 9.6; 8 lb. hay—0.83, 10.8, 5.0, 8.9.

HIGH-MOISTURE ENSILED BARLEY WITH AND WITHOUT ALFALFA HAY FOR FATTENING YEARLING STEERS—E. C. Frederick, D. Reimer, O. E. Kolari, W. J. Aunan and L. E. Hanson—Forty "medium" Hereford steers were divided into four lots of 10 and fed: (1) rolled dry barley and 4 lb. alfalfa hay; (2) rolled dry barley and 1 lb. barley supplement; (3) rolled high-moisture ensiled barley and 4 lb. alfalfa hay; (4) rolled high-moisture ensiled barley and 1 lb. barley supplement. The barley supplement consisted of 60%

CALIFORNIANS AT POULTRY COURSE—These Californians were among 37 students from six states, plus France and Germany, who completed a four-day poultry short course at Dr. Salsbury's Laboratories, Charles City, Iowa. Covered in the concentrated study were flock management problems, prevention and control of poultry diseases. Among the students were, seated, left to right, E. A. Collier, Dr. Salsbury's territory manager, Fresno; Jeff O. Harrison, Poehlmann Hatchery, Petaluma; Roscoe K. Wells, Summers Ranch, Inc., Ceres; James W. Fisher, Fisher's Poultry Ranch, San Jose; Keith F. Poehlmann, Poehlmann's Hatchery, Petaluma; Bud D. Fisher, Hayres Egg Farm, Lathrop; A. W. Schriner, Dr. Salsbury's territory manager, Santa Rosa. Back row, left to right, Nels B. Sorenson, Feather Knoll Farm, Petaluma; Harry W. Jaggard, Jaggard Poultry Ranch, Santa Rosa; Ray L. Colwell, Rainbow Farms, Turlock; John H. Jeppeson, Donsing Hatchery, Rio Linda; Bailey R. Townsend, Townsend Farms, Ripon; Leland R. Jasper, Mariposa Enterprises, Mariposa; Frederic H. Miner, Bundeson Brothers Petaluma Hatchery, Petaluma.

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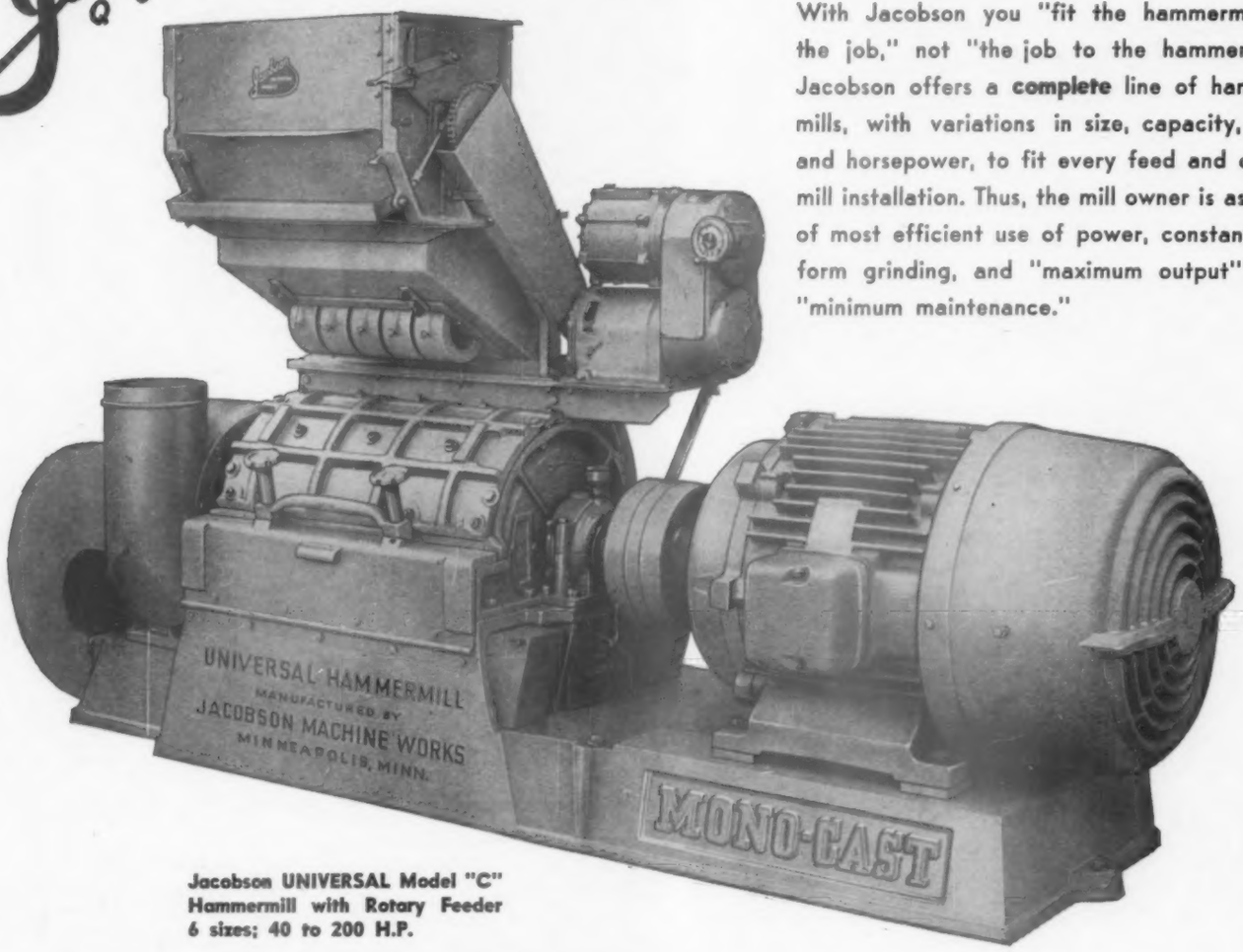

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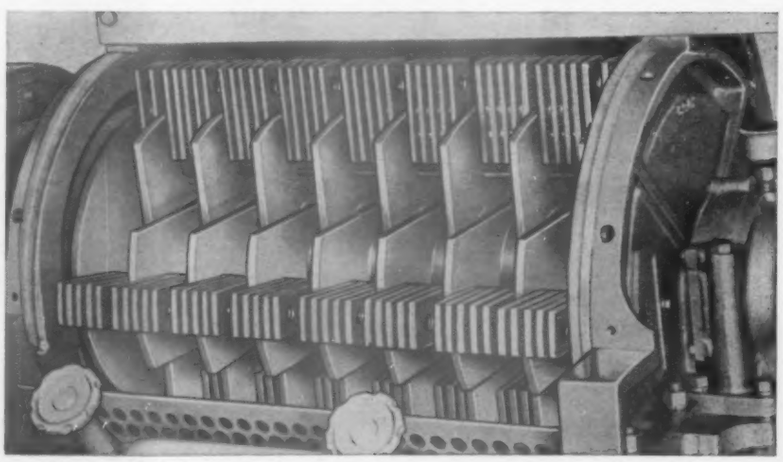

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Greatest average daily gains (2.40 lb.) were made by steers fed rolled wet barley and barley supplement and the lowest gains (2.12 lb.) were made by steers fed rolled dry barley and barley supplement. Average daily gains of steers fed rolled dry barley and alfalfa hay (2.25 lb.) and rolled wet barley and alfalfa hay (2.22 lb.) were similar. The daily intake of moisture-free feed and feed required per 100 lb. gain (lb.) for the treatments were, respectively: dry barley and barley supplement—17.6, 831; dry barley and alfalfa hay—19.8, 879; wet barley and barley supplement—19.2, 797; wet barley and alfalfa hay—20.5, 923.

Results of carcass evaluations indicated that treatments had little if any effect upon rib eye area and fat cover over the 12th rib. Marbling scores and carcass grades tended to be higher for steers fed rolled dry barley than for those fed high-moisture ensiled barley.

EFFECTS OF FINENESS OF GRIND IN PELLETED HAY UPON THE FEEDLOT PERFORMANCE AND CARCASS QUALITY OF FATTENING CALVES (Preliminary report)—H. E. Hanke, R. E. Smith, O. E. Kolari, A. L. Harvey and L. E. Hanson—Thirty-six calves were allotted into six lots of six. Treatments (two lots of cattle per treatment) consisted of alfalfa-brome hay ground through a (1) ⅛ in., (2) ¼ in. and (3) ½ in. screen and then made into ¾ in. pellets. Cracked shelled corn was fed to appetite and soybean meal was fed to meet the dietary requirements of the calves for protein. They were fed 6 lb. hay pellets per head daily the first 56 days on feed, 5 lb. the second 56 days, 4 lb. the third 56 days and 3 lb. the fourth 56 days.

Results: Differences in average daily gains, feed required per unit weight gain and feed cost per cwt. gain due to treatment differences were small during the first 161 days on feed.

PASTURE FERTILITY AND BEEF PRODUCTION—P. M. Burson, A. R. Schmid, A. L. Harvey and O. E. Kolari—Thirty "medium-to-good" steers were turned onto pasture May 23 for a pasture season of 106 days. Pasture treatments consisted of: (1) brome and orchard grass, not fertilized; (2) brome and orchard grass, fertilized with NPK, and (3) alfalfa, brome and orchard grass, renovated and fertilized with NPK. The number of steers pastured on each pasture treatment was determined by the carrying capacity of the pasture (i.e., 6, 10 and 14 steers, respectively, were initially turned onto the above three pasture treatments).

Results: Average daily gains of steers pastured on non-fertilized grass (1.80 lb.) and fertilized grass pastures (1.83 lb.) were similar and less than for cattle grazed on renovated pasture (2.14 lb.). However, steers grazed on fertilized grass pastures and renovated legume-grass pastures produced about 80% (310 lb.) and 125% (385 lb.) more beef per acre than steers grazed on non-fertilized grass pastures (171 lb.). Renovated and fertilized grass pastures yielded 180 and 170 pasture days, respectively, compared to 95 days for the non-fertilized grass pastures. The value of beef produced per acre less tillage, seed and fertilizer costs, from non-fertilized grass pastures was $37.62 compared to $53.20 and $70.70 for fertilized grass and renovated pastures, respectively.

BEEF PRODUCTION FROM FERTILIZED GRASS PASTURES—A. R. Schmid, P. M. Burson, A. L. Harvey and O. E. Kolari—Sixteen "medium-to-good" yearling steers were pastured for 106 days on brome-timothy pastures that were: (1) not fertilized; (2) fertilized with 8 tons manure per acre; or (3) fertilized with 80 lb. nitrogen per acre. The pastures treated with manure or nitrogen had received a basic application of 200 lb. 0-20-20 per acre each year since 1957. Initially four steers were turned on the non-fertilized pastures and six each on the pastures treated with manure or nitrogen. Two steers were removed from each pasture treatment July 18.

Results: Average daily gains of steers grazed on non-fertilized pastures or pastures fertilized with manure or nitrogen were 1.81, 1.61 and 1.71 lb., respectively. Steer pasture days obtained per acre on manure or nitrogen-treated grass pastures were identical (168) and 66% more than from non-fertilized pastures (101). The nitrogen-treated pastures produced 287 lb. beef per acre compared to 270 lb. and 183 lb. from the manure-treated and non-fertilized pastures, respectively. Differences in the value of beef produced per acre, less fertilizer costs, were small (non-fertilized, $39.29; manure-treated, $39.08; nitrogen-fertilized, $42.82).

THE EFFECTS OF COBALT "BULLETS" AND PASTURE FERTILIZATION ON BEEF PRODUCTION—A. L. Harvey, O. E. Kolari, J. C. Meiske, P. M. Burson and A. R. Schmid—Thirty "medium-to-good" yearling steers were grazed on (1) non-fertilized bromegrass, (2) fertilized bromegrass or (3) fertilized alfalfa-brome pastures. Initially, 6, 10 and 14 steers, respectively, were turned onto the above pasture treatments. During the summer two steers each were removed from the non-fertilized grass and fertilized grass pastures and six from the fertilized legume-grass pastures. One half of the steers on each pasture treatment was given a 20 gm. cobalt "bullet" May 23, 1961, the start of the pasture trial.

Results: Giving cobalt "bullets" to yearling steers on pasture increased average daily gains 0.12 lb. (1.82 vs. 1.94 lb.), beef produced per acre 18 lb. (272 vs. 290 lb.) and value of beef produced per acre $3.96 ($59.84 vs. $63.80). Treating the steers with cobalt "bullets" increased beef produced per acre 8 lb. on non-fertilized grass (167 vs. 175 lb.), 19 lb. on fertilized grass (301 vs. 320 lb.) and 29 lb. on fertilized legume and grass (371 vs. 400 lb.) pastures.

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SWINE DAY

(Continued from page 42)

D. Wallace and J. W. Carpenter. Two experiments involving a total of 66 slaughter pigs were conducted. In the first experiment, pigs were individually self-fed either ground corn or sugar for 60 hours prior to slaughter. Consumption was low for this experiment averaging 3.6 lb. per pig for the ground corn and 2.1 lb. per pig for the sugar. No significant differences in liver weight or liver palatability were observed, nor were differences in carcass yields noted. In the second experiment, pigs were individually fed either ground corn or a ration containing a mixture of 70% corn and 30% sugar for 60 hours prior to slaughter. Consumption was 9.7 and 12.4 lb. for the ground corn and ground corn-sugar mixtures respectively. Again, no significant differences were noted in liver weight, palatability or carcass yields.

Effect of Temperature on Early Embryo Survival in Gilts—A. C. Warnick, V. E. Caldwell, H. D. Wallace and A. Z. Palmer. A comparison was made of the reproductive efficiency with 32 Duroc X Landrace gilts at 60° F., 90° F. and at prevailing outside temperatures with natural shade between Aug. 23 and Nov. 23, 1960. The gilts were assigned to their respective locations 10 days after their first estrus and bred once at their second estrus to a fertile boar and killed 25 days later to determine ovulation rate and number of embryos. Temperature had no influence on number of eggs ovulated or conception rate. Prior to three days after breeding, there was little influence of temperature on number of embryos. However, gilts kept at 90° F. from 3 to 25 days post breeding had 3.1 fewer embryos than those at 60° F. Gilts kept on pasture with ample natural shade had nearly as many

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Ruggedly constructed of heavy arc welded steel throughout . . . the "Mix 'n Grind" is available in one, one and a half, and two ton models to meet your needs. A vertical screw elevator with automatic electric feed cutoff is available as extra equipment.

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Springfield, Ohio

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☐ Remote Change Hammermill
☐ Twin Molasses Mixer
☐ Vertical Screw Elevator
☐ Bucket Elevator
☐ Pit Auger
☐ Electric Truck Hoist
☐ Chain Drag
☐ Corn Sheller with Blowers
☐ Combined Sheller-Cleaner
☐ Gyrating Cleaner
☐ Regular Corn Sheller
☐ Pitless Corn Sheller
☐ Corn Scalper
☐ Corn Cutter and Grader
☐ Corn Crusher-Regulator
☐ Cob Crusher
☐ Roller Mill
☐ Electric Bag Cleaner
☐ Forced Air Carloader
☐ Magnetic Separator
☐ Grain Feeder
☐ Grain Blower
☐ Complete Line Catalog

NAME_____
TITLE_____ PHONE_____
FIRM_____
CITY_____ STATE_____
FEEDSTUFFS

TABLE 10. Soaked vs. Unsoaked Shelled Corn for Growing-Finishing Swine

Treatment	Soaked corn and supplement	Unsoaked corn and supplement	Complete ground ration
Initial weight, lb.	56.4	56.8	56.6
Final weight, lb.	143.0	140.1	164.3
Daily gain	1.22	1.17	1.52
Daily feed	4.38	4.12	5.28
Corn	3.61	3.33	4.12
Supplement	0.77	0.79	1.16
Feed per lb. gain	3.59	3.51	3.48
Cost per 100 lb. gain	$11.46	$11.34	$12.17

embryos as those gilts kept at 60° F.

These data suggest the importance of keeping the breeding female in the coolest part of the farm, particularly after breeding during the hot summer months.

A Comparison of Loin Eye Areas From the Left and Right Sides of Pork Carcasses—J. W. Carpenter, A. Z. Palmer and H. D. Wallace. The left and right loins of 174 barrow and gilt carcasses were cut between the 10th and 11th ribs and the area of the loin eyes measured. In 85 carcasses, the right side had the largest loin eye area, whereas 82 carcasses had larger loin eye areas in the left side. In seven carcasses, the loin eye areas of the left and right sides were the same. Differences between left and right loin eye areas were not significant even though in some instances differences were appreciable. Errors or differences were large enough to merit further consideration of means to eliminate splitting errors, cutting procedure, cutting position, tracing errors and measuring errors.

In other talks, Tom Meacham described an experiment on the vitamin A requirements and presented information on irradiation work with swine.

Dr. Wallace discussed confinement feeding and the use of a lagoon for manure disposal. The lagoon appears to be the answer to one of the most troublesome problems in confinement feeding.

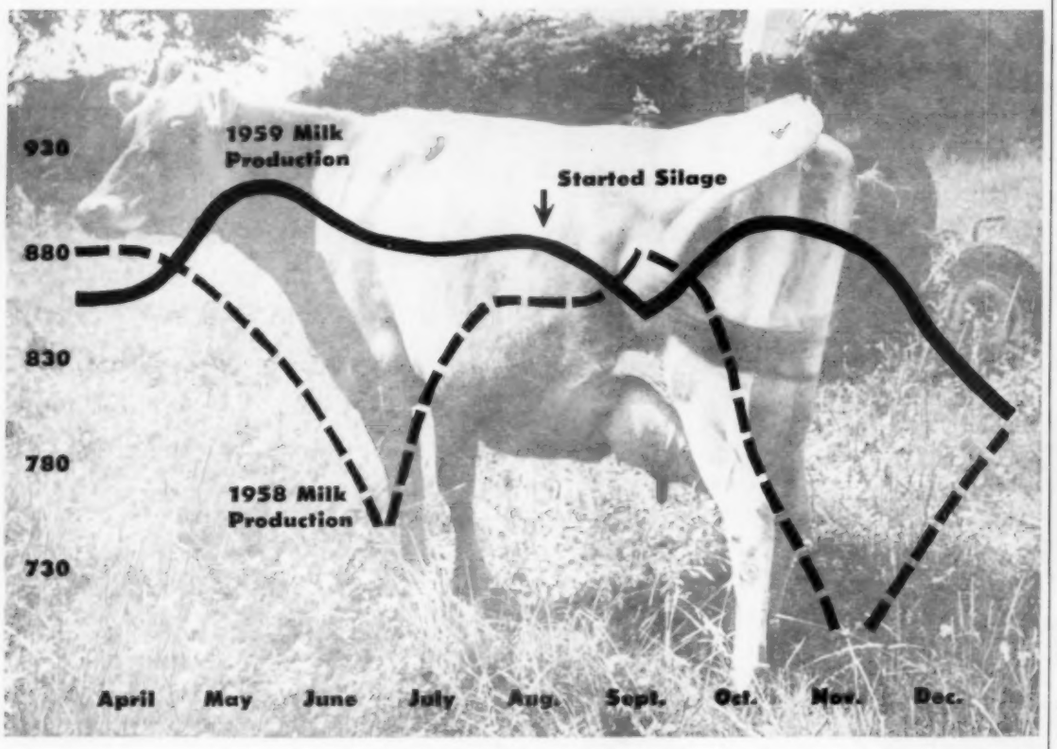
At noon, a barbecue lunch was served by the graduate students of the animal science department.

The afternoon program included presentations on the following topics:

"Swine Outlook," Dr. Wallace; "Importance of Records," Clifford Alston; "Evaluation of 1959-60 Farmers Home Administration Swine Records," M. Roberts; "Suggestions for Improving Marketing of Hogs," Dr. T. J. Cunha; "Improving Net Returns Through Group Action," Dr. E. W. Cake; "Time-Saving Hog Equipment in Madison County," O. R. Hamrick; "Report on Hog Cholera Program," Wayne Mixson; and "What You Should know About Atrophic Rhinitis," Dr. C. B. Plummer.

Information relative to these subjects may be obtained by writing to the author of this article.

INGREDIENT GROUP HEAD—Paul W. Bonewitz, newly-elected president of the National Feed Ingredients Assn., is shown above. Mr. Bonewitz, who is president of Bonewitz Chemicals, Inc., Burlington, Iowa, has been a member of the board of directors of the association, according to I. Levin, secretary of the association which has its headquarters in Des Moines. Immediate past president of the group is Dean Stauffacher, Diamond V Mills, Inc., Cedar Rapids, Iowa.



Figures Don't Lie ---

Figures don't lie, agrees Wilmington Prince Minnie, top milk and butterfat producer of Wilmington College, Ohio's Jersey herd. Two years ago the herd's milking ration was amended to include 600 pounds of **Schenley Dried Distillers Grains** per ton of Grain ration. Monthly milk production immediately increased 50 pounds per cow and has remained higher and more consistent than during the comparable period for any previous year. Minnie has this year averaged almost 80 pounds of butterfat per month, with over 94 pounds in March and April, compared with only 607 pounds for the entire 1959 period, thanks to the inclusion of **Schenley's Distillers Dried Grains** in her diet. **Schenley Distillers Dried Grains** added to your milking grain ration can mean increased milk and butterfat production whatever the season. Write to:

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Yes... you can get this HANDSOME FREEZER FREE

with every purchase of two 25-lb. drums of *New* FLOXAID... the Merck poultry drinking-water booster that:

- Contains high levels of streptomycin
- Contains two forms of penicillin
- Contains 9 vitamins for normal growth
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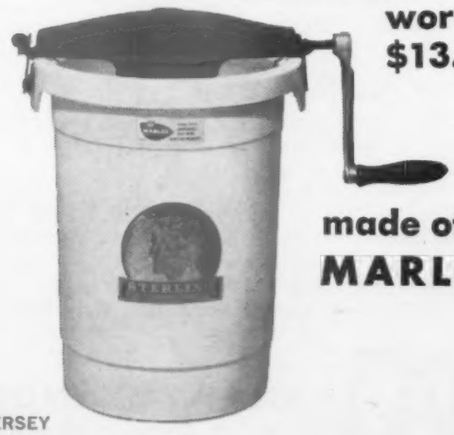
- Does not clog automatic fountains or water-medication systems... leaves no sludge!

(Each 25-lb. drum contains SEVENTY-FIVE 5⅓-oz. plastic bags)

Or—*FREE* with each single 25-lb. drum of *New* FLOXAID Formula

A hand-operated ICE CREAM FREEZER worth $13.95 made of MARLEX



MERCK CHEMICAL DIVISION, MERCK & CO., INC., RAHWAY, NEW JERSEY

JOE BROOKS

BY AL P. NELSON

Advice Is Available If You Ask for It

The supply salesman had asked Joe to lunch at the Blue Goose. He was a tall, handsome fellow named Bill Striker, and his hair was just beginning to get a tinge of grey at the temples.

The two men talked football, basketball, business and foreign relations, interspersing their conversation with some jokes. Finally, Joe said, "Bill, you get around. You see what lots of feed men do in advertising and merchandising. I plan to revamp my twice a month mimeographed bulletin. Got any ideas?"

Bill Striker looked thoughtful. "You've got a fine bulletin, Joe. How many years have you been issuing it?"

"Nine," said Joe, "and the farmers like it. But, you know how it is these days. You can't keep doing one thing the same way too long in advertising. People get too used to certain ad ideas. You have to give them a fresh appeal."

Mr. Striker chewed on his last wedge of apple pie, then laid down his fork and stirred his coffee. "Joe, that's what I like about you. You are never satisfied with things the way they are. You always want to improve. And that's the way a man progresses."

"Thanks," Joe said. "And I notice you salesmen don't always use the same approach on us feed men. You always have some new idea, some new product, some suggestion to offer us—to make us think differently."

Mr. Striker held up his hand. "Wait a minute, Joe. We suggest ideas to men like you—because you'll listen. But to some others we keep our lips buttoned on the extra curricular stuff. Lots of salesmen learn the hard way. I did. Want to hear about it?"

"Yes."

Tough Cookie

Mr. Striker chuckled. "Well, when I started to sell I thought every prospect was my meat. And I'd offer suggestions to help the feed men boost their sales. But I struck one tough cookie I couldn't sell, so I saved my best display idea for him. I thought it was just a mtter of writing up the order after I gave him my pearl of an idea."

"Did he take it?"

Mr. Striker looked a little sheepish. "He did not! Furthermore, he told me that he did not want any ideas from me or anybody else. If anyone was to get ideas for his business, he said, he would get the ideas. He wanted to make that absolutely clear."

Joe grinned. "Well, you must have recovered, Bill. You're one of the best salesmen who call on me. You've given me many suggestions on selling and display and proofing that have meant money to me."

"Thanks, Joe. I know you want ideas. Now I study a man carefully when I start to sell him. I make a mark in my prospect and customer books. One mark means he likes ideas, and another mark means, he's not receptive. Now you asked me outright for ideas on your bulletin—right?"

"Check," said Joe.

Bill Striker grinned. "You feed men are always trying to work cooperatively with county agents and veterinarians, aren't you?"

Joe nodded. "We are."

"Then," said Mr. Striker, "you might want to ask the county agent to write one or two articles for your bulletin each year on a subject which he chooses. You might do the same with the veterinarian. Not only would this develop better relations with those men, but their articles will add prestige to your bulletin."

Joe smiled. "Now that's a good idea," he said. "It certainly is worth trying. It will show the vet and the county agent that I'm willing to work with them for mutual benefit."

Mr. Striker nodded. "You might list the dates and places of the county agent's meetings in your bulletin. He'd appreciate that. One county agent told me he needed more publicity on his meetings and that he wished feed dealers would help him on this."

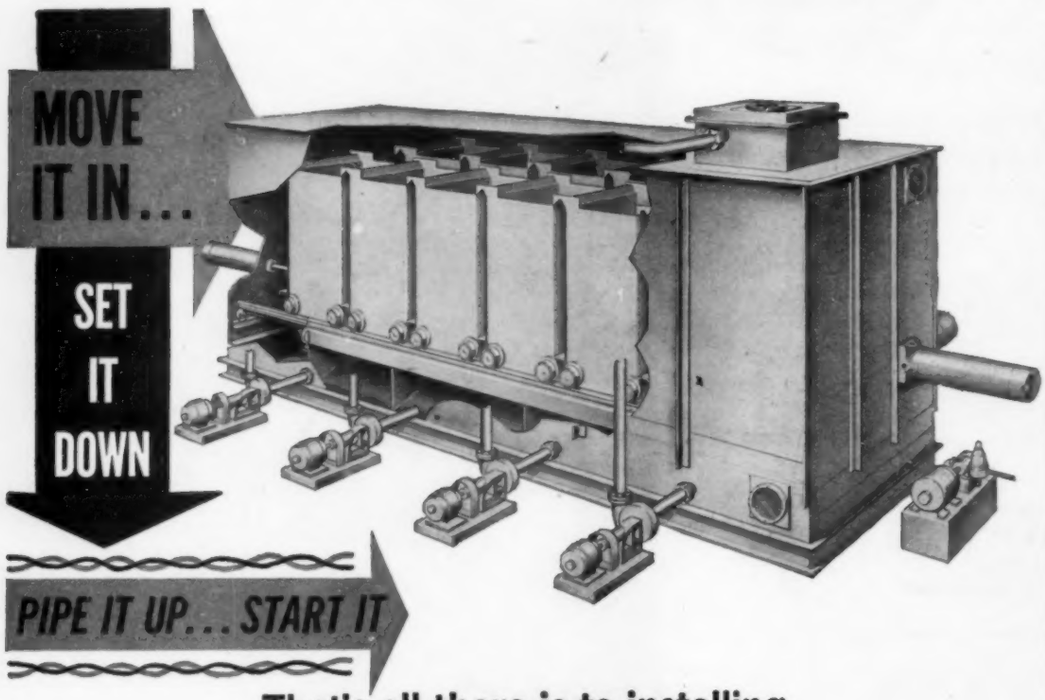
"That's what I like about your suggestions," Joe said. "They always have a practical touch."

Market Report

"There's a feed manufacturer in Illinois," Mr. Striker went on, "who makes a lot of quality feeds, and he also operates a custom pelleting service. This manufacturer issues a weekly, printed market report covering cattle, hogs, sheep, eggs and cash grains (Chicago). The report lists prices four days a week and also the Monday prices a year ago."

"Sounds interesting," Joe commented thoughtfully.

"It is, and it is in great demand,"



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Prevent mechanical stress due to material weight.

The Anderson Horizontal Hydraulic Basket Extractor is designed to process granulated or flaked oil seeds with equal efficiency. Oil content in the material can range from 9 to 18%. However, pressed vegetable oilseeds and other materials such as cracklings, containing higher or lower percentages of oil or grease may be processed. Each Extractor is factory assembled and tested, shipped ready for operation. Write for complete details and literature.

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PACO is the superior Molasses Distillers Dried Solubles — nutritionally sound, palatable to stock and just about the *best pellet binder* you can buy! Paco is the ideal fortifier to add to your feed formula, provides balanced protein, B-vitamins, essential minerals plus unidentified growth factors. Compare 'em all—you'll choose Paco!

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☐ send Paco sample
- ☐ 2-oz.
- ☐ 2-lb.
- ☐ 10-lb.
- ☐ 50-lb.

☐ send Natico sample
- ☐ 2-oz.
- ☐ 2-lb.
- ☐ 10-lb.
- ☐ 50-lb.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE____

Mr. Striker said. "This manufacturer also lists prices on feed ingredients such as soybean meal, linseed meal, etc., as well as prices a year ago."

"He's giving his customers a real service," Joe said.

"Yes, and others benefit from it, too," Mr. Striker said. "He sends this report to county agents, to bankers in the county and a few others interested in agriculture. It's a real educational and informational service, and it builds good will for this feed man. Joe, you could probably use something like this in your twice a month bulletin. It would cost only the materials for an extra page. The postage rate on your bulletin probably would be the same."

Joe nodded. "Certainly I could. Give me that manufacturer's name so I can write him for a sample and costs."

Mr. Striker jotted the feed man's name and address on a card and handed it to Joe.

"I can see where these two ideas will pump new life into my bulletin," Joe said. "These ideas are exactly what I want. What's the charge?"

Mr. Striker grinned. "No charge, Joe. You know that. But here's my home address. Please send me a few copies so I can read the new bulletins over the week end."

When Mr. Striker let Joe off at the mill and prepared to drive to the next town, he said, "Joe, I really don't need to tell you, but, just to remind you, remember that a lot of salesmen with ideas are just waiting for dealers to ask for their ideas, which can help to build a feed business, or increase income, or cut costs or improve service. It's counselling advice that costs a dealer nothing."

"You've done me a goo turn, Bill, and I appreciate it. The monthly meeting of our Douglas District Feed Club is scheduled for next Thursday night. I'll get up and, in a five minute talk, pass on your advice to other dealers. I'll tell them to ask their suppliers for ideas to help their business."

Mr. Striker grinned. "Thanks, Joe. You know, salesmen need a little plug now and then. We haven't got the easiest job in the world." And he drove off waving to Joe, as his car turned the corner.

$135,000 Fire Loss

SYLVESTER, GA.—Fire destroyed 50,000 bu. of grain and damaged the interior of the Worth County Milling Co., here recently. Damage was estimated at more than $135,000, according to Harmon Jeffords, president.

APPROVE DESIGN

ATHENS, GA.—The design of the new U.S. poultry research center, to be constructed at the University of Georgia, Athens, has received final approval from the General Services Administration, Washington. Cost is estimated at $876,000.

Arkansas Studying Commercial Feeding Of Channel Catfish

LITTLE ROCK, ARK. — A five-year-old experimental program of the Arkansas Game and Fish Commission has demonstrated that commercial production of channel catfish in the state is feasible and can be profitable.

Fish farming was started in the state about 10 years ago. But growers have favored buffalo and other fish over channel catfish because the catfish grow slower and have cost more to raise than the other breeds.

Realizing that there is now a market for channel catfish, the commission is developing cheaper methods of raising catfish in one-acre ponds. It is hoped that potential profit will be enough to attract growers.

Formula Feed

Most of the yearling channel catfish grown in the commission's experiments at the Joe Hogan State Fish Hatchery, Lonoke, are fed a formula feed consisting of 25% cottonseed meal, 25% soybean meal, 30% rice bran and 20% miscellaneous ingredients (fish meal, dried whey, vitamins, etc.).

According to records of Laney Hill, a Lonoke fish farmer who is applying knowledge resulting from the state experiments, an investment of $130.20 in feed and $100 in fish returned a fish crop worth $378.30 six months later. The difference, $148.10, is not profit, because costs for labor, water, fertilizer, levee construction and other items must be subtracted from it, but the net realized still is better than that of some other farm crops.

Admittedly, Mr. Hill's return was exceptional. Ninety-seven per cent of his yearlings grew to market weight. Normal survival rate, according to Andrew Husley, chief of the commission's fisheries division, is 80%. Mr. Hill's fish grew an average of 1.3 lb. in six months.

"We Didn't Know"

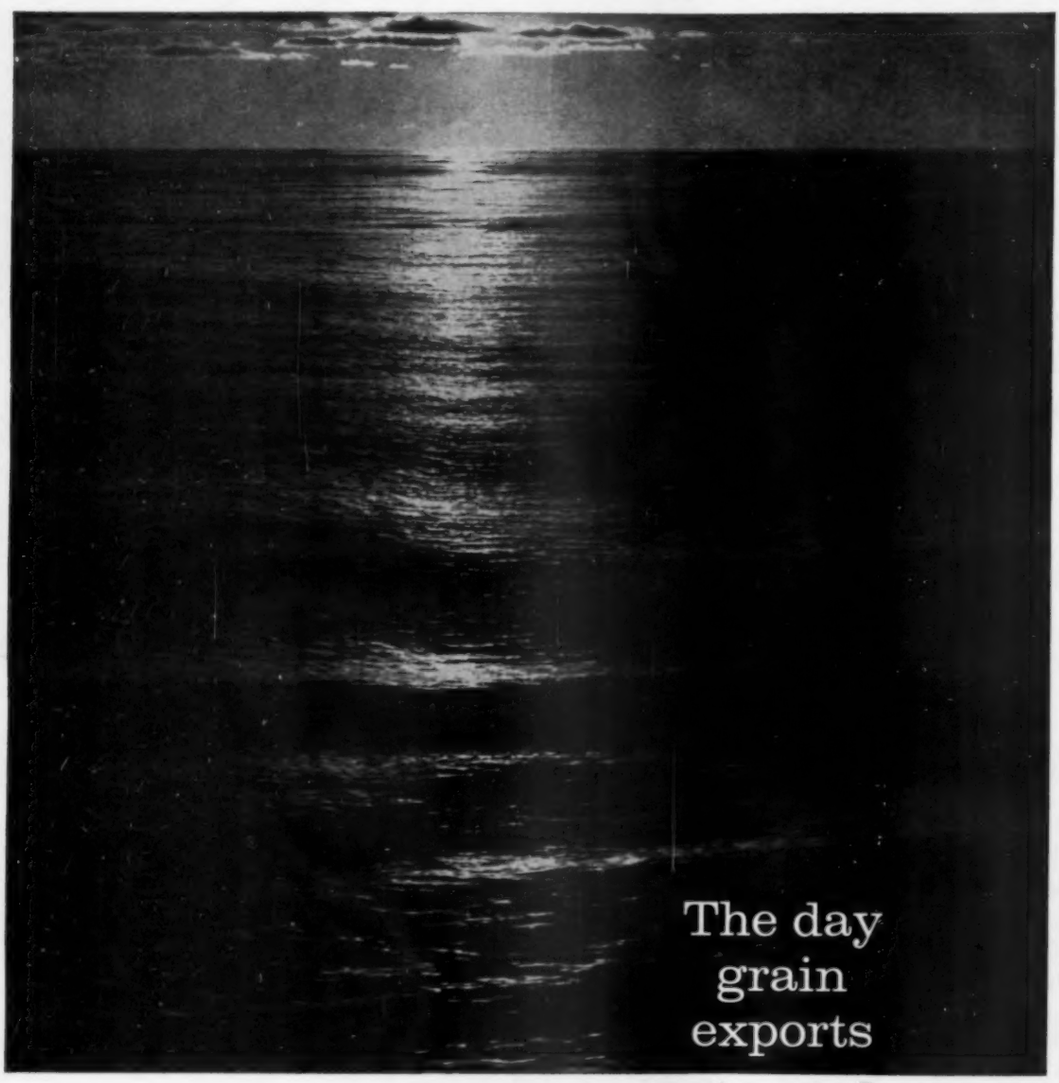
"Up to two years ago," Mr. Hulsey said, "we didn't know that catfish could be reared economically. Even foremost officials said channel catfish were too expensive to ever be produced for market.

"The market price for rough (not dressed) channel catfish is 30¢ lb. It costs the farmer 20¢ lb. to produce these fish. That's little profit and doesn't include labor.

"Fingerlings cost the fish farmer 10¢ each. Two pounds of feed (costing 10¢) are required for each pound of growth. So the commission is trying to reduce the price of the fingerling and of the feed."

Mr. Hulsey says the ideal market weight of a channel catfish is 1.3 lb. "We want a cat that dresses out at about 12 ounces . . . just about a normal serving size."

He noted that the state hatchery does not sell fish, but they can be obtained from private hatcheries. "We only give technical aid to the fish farming industry," Mr. Hulsey said.



It could happen! It's happening to U.S. tobacco, which is beginning to price itself out of its once-lucrative export market. Without grain exports resulting surpluses would make today's a piker by comparison. Domestic prices would tumble. The whole farm economy would suffer.

How can we protect our markets?... and more, how can we maximize exports? Since most foreign buyers shop for the cheapest grain, we must continue to search for ways to reduce the price spread from producers to consumers...to keep U.S. grains competitive in the world market.

Farmers are pressing for more efficient yields to lower costs. Elevators are utilizing the efficiency of the private grain trade. And companies like Continental are stepping up marketing and research to find lowest cost ways to deposit the fruits of American Agriculture on foreign soil. This teamwork assures an ever-widening and profitable export market for all of us ...farmer, elevator and grain company.

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Findings Reported On Avian Nephrosis

BERLIN, MD. — Results of research conducted on a virus isolated from birds affected with avian nephrosis have been announced by L & M Laboratories, Inc., here.

Dr. R. W. Winterfield, technical director for L & M Laboratories, said this disease is of an infectious nature but does tie in closely with certain signs of a nutritional deficiency or mineral imbalance.

Dr. R. W. Winterfield, Dr. A. S. Cosgrove and Dr. S. B. Hitchner of the L & M Laboratories staff report the following findings in regard to the virus which has been isolated earlier from the kidneys of affected birds by Dr. Winterfield:

1. This virus does cause nephrosis (or Gumboro disease) in chickens—especially when infected at a very early age.

2. The virus is that of infectious bronchitis, according to present standards, but appears to be a variant type which has a complex relationship to other bronchitis strains when studied by challenge and serological tests.

3. This virus appears related, but not completely, to another bronchitis virus strain isolated (by Hitchner) in the Midwest in 1954. It has been observed by L & M veterinarians that this bronchitis isolate will also cause nephrosis as it appears in the field.

4. The virus may be difficult to isolate when the condition is called to the attention of the pathologist—pathological changes appear, in many cases, several weeks after initial infection has taken place.

5. The viruses studied thus far which produce nephrosis are of low virulence for the respiratory tract—respiratory signs may go unnoticed initially so as to indicate one is not dealing with a respiratory infection.

The L & M research team further reports:

"Avian nephrosis as a clinical disease was first recognized on Delmarva in 1957 (by Dr. Cosgrove). In the meantime, the cause of the disease has remained undetermined. Signs of the disease are variable but often include droopiness, ruffled feathers, trembling or quivering, diarrhea and a drop in feed consumption. The percent of birds involved may not be high although the net effect on weight gains and feed efficiency may be great—the condition may go undiagnosed by the servicemen, yet be reflected in the birds at market time.

"Primary degenerative changes (nephrosis) appear in the kidneys and excessive urate deposition sometimes occurs. The bursa of Fabricius is often distended. Studies (by Dr. Cosgrove) on numerous field cases show that nephrosis causes a depletion of the serum calcium reserve which probably accounts for the harmful after-effects of the disease. Because of this alteration in calcium metabolism, soft bones and other signs of rickets may appear in certain cases—instead of searching for an infectious agent, one is inclined to examine the diet on which the birds are feeding. This disease should be considered carefully if a soft bone problem arises for no apparent reason. And, too, because of the upset in calcium metabolism, muscular hemorrhages may occur, and a diagnosis of hemorrhagic disease may be made."

The L & M researchers say further study of avian nephrosis and its relationship to infectious bronchitis and variants of bronchitis virus goes on and will be reported later. "In the meantime," they say, "we feel the future attack on this problem should be based on the following:

"1. The research-minded vaccine manufacturer should seek those bronchitis strains which are immunologically related to nephrosis—inducing strains, as well as other variants, to give the needed protection.

"2. Steps should be taken by the manufacturer to prevent vaccine contamination with nephrosis-producing strains.

"3. Apparently, early infection takes place. If this is true, early bronchitis vaccination with a blend of suitable strains (as young as one day of age) should be practiced on farms where the disease has been a continuous problem."

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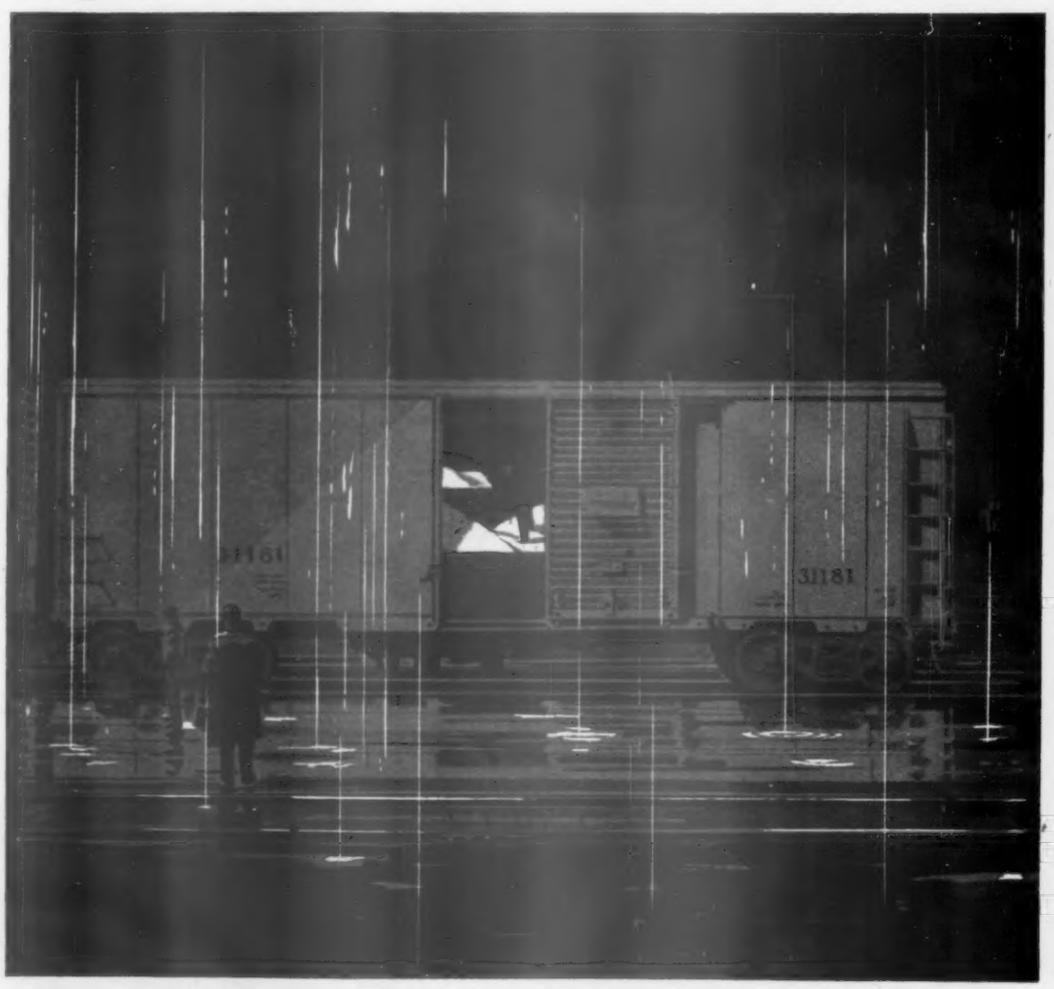

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Both Morton Special Mixing and Iodized Mixing Salt may be safely stored in bags or bulk for any reasonable time. Even after storage, they flow more freely than any other salt you've ever used.

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IDEAS TO HELP YOUR CUSTOMERS

The Hens Don't Care

Poultrymen and researchers have known for years that artificial light increases egg production in the shorter days of the year, but only recently was it learned through research that the type or size (wattage) of the bulbs doesn't have much effect on production.

J. E. Humphrey, University of Kentucky extension poultryman, points out that Michigan researchers have found that there was "no significant difference" in the production from pullets housed in structures lighted by 100-watt incandescent bulbs, 40-watt fluorescents, 60-watt incandescents or 15-watt red bulbs. The amount of feed required to produce a dozen eggs was about the same under all light treatments, the researchers said.

'Warm' Barn for Cows?

A dairy cow produces about as much milk in a "cold" barn as in a "warm" one, but the real problem arises when a barn is both "warm" and "cold," says Dr. Robert Aldrich, Michigan State University agricultural engineer.

Dr. Aldrich defines a "warm" barn as one where the owner tries to control inside temperature and a "cold" barn as one where the inside temperature remains close to the outdoor reading.

He points out that research has indicated that the added expense of a "warm" type barn does not pay for itself with dairy cattle. However, he says, many farmers believe that the animals will produce better with greater comfort and try to turn "cold" barns into "warm" ones. And, he says, that's where problems can begin.

"The farmer may close the building tightly without insulating," Dr. Aldrich says. "This can prevent ventilation, so the moisture inside cannot escape. Lack of insulation keeps the temperature down and causes condensation.

"It's also a mistake to insulate without proper ventilation. This increases warmth, which in turn boosts the air's moisture holding capacity. But poor air movement fails to remove excess moisture from the building. A 'cold' barn requires ventilation, too. Air inlets along the back wall and outlets in the ridge usually do the job."

◆

Early Calf Weaning

Dairymen can wean calves when they are about a month old if they will eat enough dry feed, say University of Minnesota dairy researchers.

They point out that dry feed for a month-old calf usually means cereal grains because a young calf can't take in enough roughages. They add that it pays to watch the feeding program carefully; feeding a calf large amounts of grain when he's old enough to handle roughage may cut down his roughage utilization.

Dairy researcher W. A. Olson reported that he found little cellulose digestion in a calf through the 13th day of age. But, he noted, by the time the calf was three weeks old his digestion of cellulose was nearly comparable to that of mature cattle with similar diets.

He also noted:

Cellulose digestion increased as the diet shifted from a grain and hay ration to an all-hay ration. When grain was again offered to the calf the rate of cellulose decomposition decreased.

Cereal grains contain large amounts of starch, a carbohydrate more readily broken down than cellulose. Evidently rumen microorganisms prefer to attack the comparatively easy-to-digest starch rather than the less available cellulose.

◆

Stress on Sows, Gilts

"Extreme caution should be taken to avoid putting sows and gilts under stress during the breeding period and 30 days afterward," warns Dr. Leo Lucas, University of Nebraska swine specialist.

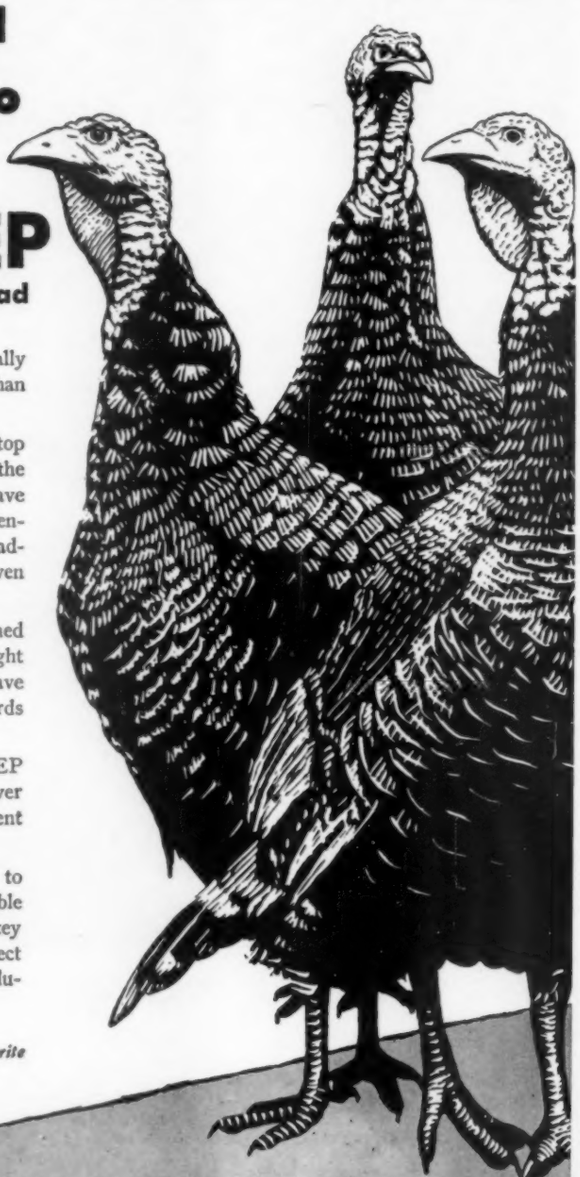
Dr. Lucas pointed out that such factors as diseases, changes in feed and environment, unnecessary moving, fighting and extreme weather conditions have been known to affect litter size. "In general, all these factors result in an increased mortality rate of unborn pigs," said Dr. Lucas.

He cited Minnesota research showing that litter size was reduced 50% due to a flu virus which attacks swine shortly after the breeding period.

He commented that the feeding

. . . ideally suited for BREEDERS, too

Whitmoyer CARB-O-SEP for protection against blackhead



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program during the gestation period should consist of a well-balanced ration. A 14% protein ration is recommended during the first two thirds of gestation and a 16% ration during the last one third of gestation, he said.

In both cases, the ration should be adequately supplemented with vitamins and minerals. "Again, the important factor is maintaining the sows and gilts in a lean or medium condition during the first two thirds of the gestation period," according to Dr. Lucas. "This can be accomplished by limited feeding of a growing-finishing ration or by self feeding a low energy bulky ration. During the last one third of gestation the sows and gilts should be placed on a full feed high energy ration."

Additional questions sometimes arise regarding the source of protein used in the ration, Dr. Lucas commented. He said University of Nebraska research indicates that plant proteins are as good as the animal proteins during gestation.

Some research has shown, however, that the addition of a small amount of animal protein (5 to 10% of the ration) has resulted in a higher ovulation rate than when plant protein was used alone, he pointed out.

A final consideration for swine producers is the use of thyroprotein in the gestation period five to 10 days prior to farrowing and during the lactation period. Dr. Lucas recommends the addition of 100 mg. of thyroprotein per pound of feed to decrease milking problems during the lactation period, if milking problems have been encountered among sows and gilts in a herd in the past.

◆

Broiler Housing Studied

With growers becoming more interested in getting their broilers to market fast and at the lowest cost, the University of Tennessee has conducted experiments on the economic advantages of three types of broiler houses. They are conventional, solar and windowless.

The conventional type house in the Tennessee experiment is similar to that found on most broiler farms in the Southeast. It is built of tongue and groove lumber and has small rigid plastic windows which can be opened and closed to help regulate ventilation.

The solar and windowless houses are built of the same type lumber and are insulated. The windowless house is completely enclosed allowing no sunlight to enter.

Thermopane windows are used in the solar house admitting sunlight during a portion of the day.

Temperature and humidity of the houses and rate of gain of the birds were recorded throughout the experiments.

The results showed that broilers in the solar house had the lowest

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over-all average weight. Growth rates in the other two houses were about the same, with the windowless house giving the best results in the winter and summer. In the mild seasons of the fall and spring, the conventional type produced the fastest growing birds.

Protecting Chickens in Atom Attack Is Topic

ORLANDO, FLA. — Measures to protect chickens in case of atomic attack will be one of the featured subjects at the annual convention of the Florida State Poultry Producers Assn. convention in Orlando Jan. 19-20. A member of the University of Florida staff will discuss the subject.

NEW FEED MILL

DICKEYVILLE, WIS. — The Dickeyville (Wis.) Feed Mill has been opened with Bert Bertjens as proprietor.

Drug-Resistant Coccidia Aid Research

WASHINGTON — Laboratory strains of drug-resistant coccidia are being studied by U.S. Department of Agriculture scientists to learn if such resistance can be overcome.

A number of coccidiostats are now available, but coccidia, like other organisms, are able to develop drug resistance — sometimes enough to cause outbreaks of the disease in treated birds, USDA said.

In laboratory studies of coccidia that cause cecal coccidiosis in poultry, Dr. D. K. McLoughlin and J. L. Gardiner of USDA's Agricultural Research Service found that these parasites gradually acquired resistance to every drug tested.

The researchers also found that the coccidia, in building resistance to one drug, may at the same time become resistant to other drugs to which they have not been exposed. This means that coccidiosis in chickens already receiving a drug will not be controlled by another drug—if it is one to which the coccidia have acquired cross-resistance.

The ARS parasitologists say, however, that development of cross-resistance doesn't necessarily work both ways. For example, coccidia exposed to one drug, A, gain resistance to it and to an untried one, B. But if the coccidia are exposed initially to drug B, and develop resistance to it, they may be susceptible to drug A until exposed to it long enough to build resistance.

Dr. McLoughlin and Mr. Gardiner hope to study all species of coccidia affecting poultry. They believe such studies would indicate drugs to which cross-resistance can be acquired and drugs to which it cannot. Meanwhile, the scientists are planning to classify various drugs according to how quickly coccidia are able to build resistance to them.

With this information, it would be known which are the most effective drugs to use in combating coccidiosis outbreaks in flocks already receiving a drug, as well as the drugs that remain effective longest, said the USDA scientists.

In studies at the Beltsville, Md., parasitological laboratory, the researchers developed resistance in the test strains of coccidia by feeding them to birds that had received less than a recommended dose of drug. This permitted many of the parasites to produce resistant offspring within the birds.

Surviving coccidia were recovered and passed through chickens treated with stronger doses of the same drug. Eventually, the coccidia gained enough resistance to cause observable coccidiosis in birds treated with recommended doses of the drug, it was reported.

Oklahoma Industry Event Is March 2-3

STILLWATER, OKLA.—All registrants will have an opportunity to attend both the ruminant and nonruminant sections of the 13th annual Oklahoma Feed Industry Conference and Workshop here March 2 and 3, Dr. Rollin H. Thayer, conference chairman, has announced.

The workshop sessions are scheduled for the morning and afternoon of March 2 and panel discussions covering subjects of general interest to the feed industry are planned for the morning of March 3.

"Plans for this year's workshop are to increase the participation of those in attendance and to encourage maximum discussion of problems and questions pertaining to the subjects under consideration," noted Dr. Thayer of Oklahoma State University's poultry science department.

"In advance of the meeting, detailed outlines of the subjects to be covered will be mailed to those who plan to attend in order that they may become familiar with the subject matter to be presented."

All of the conference and workshop sessions will be conducted in the university's Poultry Industry Building, as has been the case during the past several years. As usual, a luncheon will be served in the building at noon March 2 and a dinner will be served in the Student Union the same day.

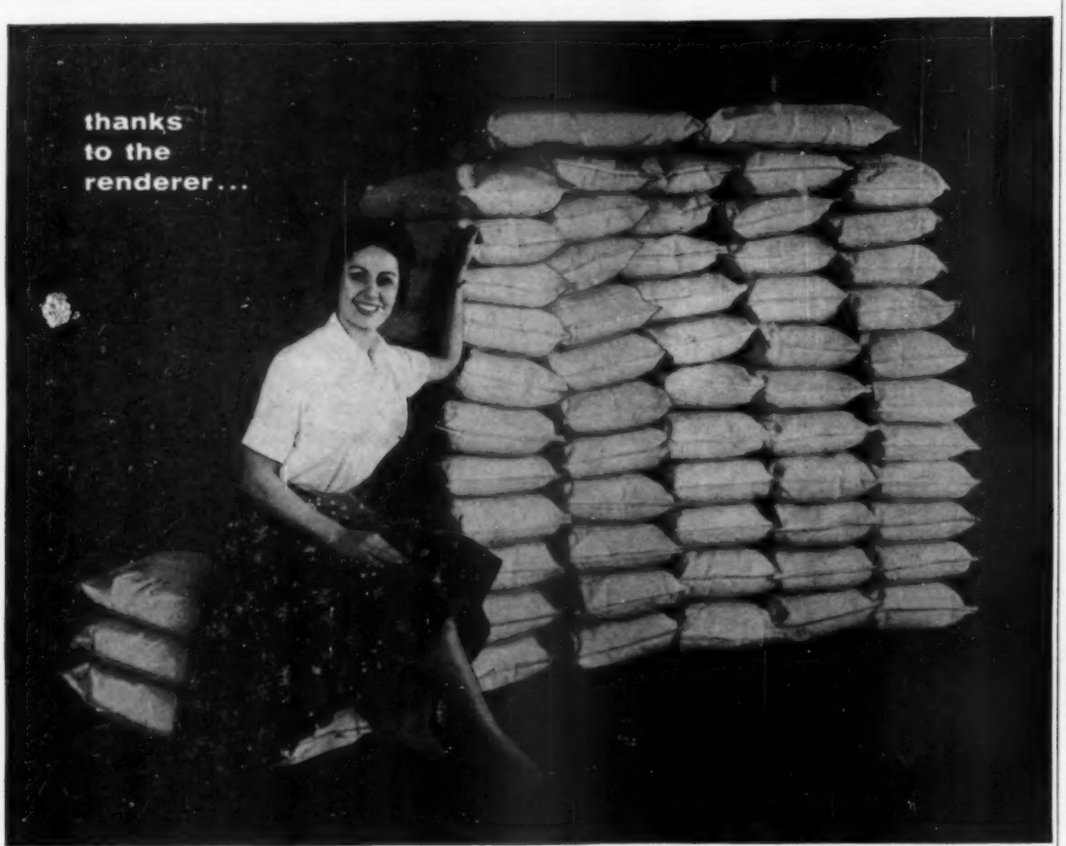
Dr. Thayer suggested that Student Union Club or motel room reservations be made as soon as possible. An opportunity for pre-registration for the conference will be provided at a later date.

Plan to Develop Idaho Phosphate

CHICAGO—International Minerals & Chemical Corp. and Husky Oil Co. have announced an agreement to develop phosphate reserves in Idaho estimated at 50 million tons.

IMC, world's largest independent producer of food-producing minerals, has extensive phosphate mining and processing operations in Florida. The reserves, owned by Husky, are located near Soda Springs, Idaho. They constitute one of the largest known reserves of surface minable phosphate ore in the U.S.

T. M. Ware, IMC president, said the Western operations would enable his company to better serve new markets for fertilizers, of which phosphate is a principal ingredient.



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What's the most efficient diet for weanling pigs? That's what recent university feeding tests set out to prove.

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Importance of Egg Marketing Plans Noted at Event

EDGEWATER PARK, MISS.—On a hot summer day a farmer was driving his horse and wagon laboriously over a dusty road. He approached a man sitting on his porch at the edge of the road. Pulling his wagon to a halt, the farmer called out: "Say, stranger, how much longer does this darn hill last?"

The stranger smiled and shouted back, "You're not on a hill, friend, your hind wheels are off."

This story was related by R. M. Hendrickson, General Mills, Inc., Hot Springs, Ark., in a talk during the recent Mississippi Poultry Improvement Assn. convention here to illustrate these key remarks: "When we consider our present position in the poultry industry we perhaps can see that our hind wheels are off, also. . . . In order to make money, the poultryman or poultry corporation is rapidly realizing that efficient production is not enough, superior management is not enough and good breeding is not enough. All of these three points are essential, but to assure success they must be combined with an organized marketing plan."

This approach, he indicated, would help put the wheels back on the wagon and help remove some uphill obstacles.

"We're in the Food Business"

"We are in the food business," Mr. Hendrickson emphasized, "and must act accordingly. In order to operate profitably in the future we must coordinate production and marketing so that we can deal from a position of strength when selling to retail outlets. The future health of our business depends on new product development, modern marketing, planned production and increased consumer education. We must be flexible in our future actions."

How can the consumption of eggs—in and out of the shell—be increased?

Even though eggs in the shell are inconvenient and don't offer variety, Mr. Hendrickson said, there still are some things that can be done to promote their sale:

1. Use of attractive cartons and in-store merchandising materials, including brochures, banners, posters, recipes, carton stuffers and "shelf talkers."

2. More promotion through restaurants, clubs, other organizations, schools, service installations and export markets.

"Fantastic Possibilities"

While promotion of shell egg sales should not be neglected, Mr. Hendrickson noted, creative marketing power should be employed to its fullest in exploiting the "fantastic possibilities" of eggs removed from their shells.

"If we are to expand our markets we must develop and merchandise new egg products," he said. "Higher income bracket people and the many working wives demand food service, not just food. . . . The steadily rising sales of food items designed to 'pop right in the oven' serve to accentuate the necessity for convenience food preparation and packaging.

". . . Our real competition is the processor of other foods who is doing a better job of originating new products and then selling them to consumers. Remember, no one has to buy any one food item; there is usually an available substitute, sometimes at a cheaper price.

". . . Products are constantly being discarded, then reissued in new and improved form with more up-to-date packaging. While all this has been going on in the food business, eggs have continually been sold in one form only—in the shell—with indifferent quality and undistinguished packaging."

Mr. Hendrickson praised the Poultry and Egg National Board for recognizing the need for more concerted action on new egg products. He said PENB's new products committee has sparked a great deal of interest in finding different ways to exploit eggs commercially. He also noted that university and government laboratories have pioneered and introduced a number of new egg products and are in the midst of research programs to develop others.

Mr. Hendrickson urged "every man engaged in the egg industry" to help further research. "You can help by getting your state university to engage in basic research on the egg and its potential uses," he said. "Certainly as much money should be spent by such institutions to develop new uses for farm products as they spend in developing new methods of efficient production."

New egg products which have been introduced as marketing possibilities for food manufacturers include: Instant scrambled eggs, frozen french toast, frozen fried eggs, an "orangegg" drink, an egg dip, an egg cookie, egg cantonese, egg loaf, chicken frankfurters and chicken bologna. Other new products, Mr. Hendrickson noted, have been tested or are in testing, research or "imagineering" stages.

Developing new products is only a beginning for the egg industry's efforts to promote consumption and sales, Mr. Hendrickson emphasized. Getting a new product on the market that will make money is yet another story.

To succeed, he said, a new product must have the potential to attract mass consumption; must have characteristics which will permit its manufacture at a price acceptable to the consumer; must return a profit to the sellers, and must provide the consumer a new or increased value.

"New products will never be the salvation of the egg industry," Mr. Hendrickson said, "but they do have a place in our future."

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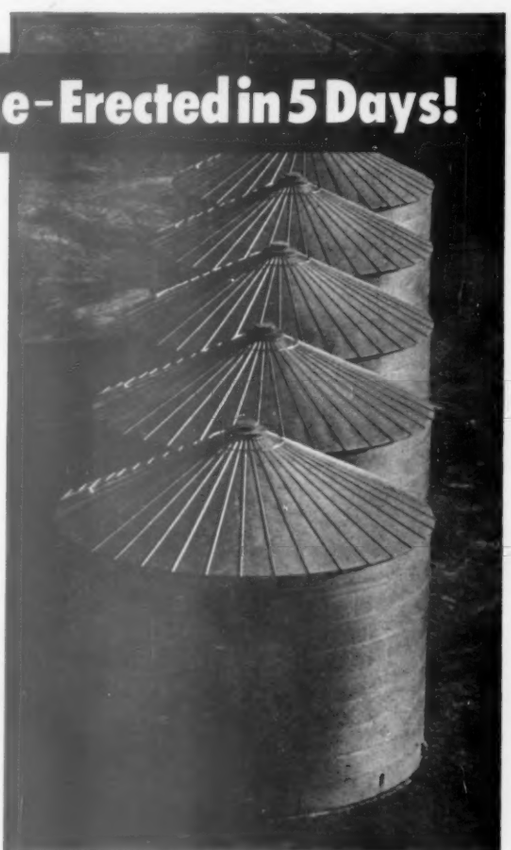

Big Storage-Fast! Above, the 5 Columbian Big Bins erected for Farmers Elevator Co. in 5 days at Valley Center, Kansas. Below—the bins in relation to the elevator itself. Note the Columbian Bolted Steel Tanks, part of the permanent elevator.

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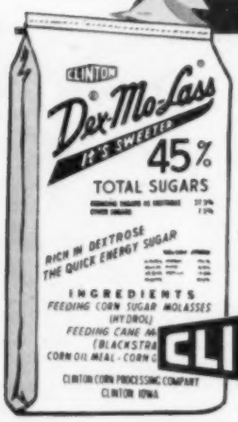

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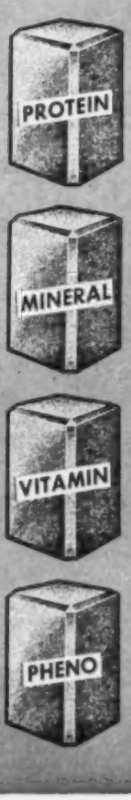

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Boron Fed to Laying Hens Found to Cut Fly Development in Cage Manure

By Special Correspondent

AUBURN, ALA. — Polybor-3, a form of boron, fed in small quantities to laying hens will greatly reduce fly development in manure under cages, results of tests made in 1957 and 1958 and just released show.

Flies are a problem to poultrymen with caged layers. If not controlled, they cause wet droppings, strong odors, and in some instances can be a health menace in cage houses.

Tests—In tests by the agricultural experiment station, Auburn University, during the summer of 1957, boron in the form of Polybor-3 was fed to caged layers in an attempt to control fly breeding in manure. This boron product is stable, easily mixed with feed, and inexpensive. Rations fed contained 4 oz., 2 oz. and 1 oz. of Polybor-3 per 100 lb. of ration. There were seven birds in each lot during the 135-day test.

Fifty-pound lard cans (15-in. diameter) were used to trap emerging flies. These traps were placed over manure five times. Each time the traps were left for two weeks. Flies emerging were killed and counted and traps were placed over new areas.

In 1958 test hens were fed Polybor-3 at the rate of 4 oz., 3 oz., 2 oz., 1 oz., ½ oz. and ¼ oz. per 100 lb. of ration. The hens were kept in colony cages, 15 hens per cage, in a typical laying house with concrete floor. Length of the test was 183 days.

A second test in 1958 was conducted with two 200-hen flocks kept on the floor. One flock was fed 4 oz. of Polybor-3 per 100 lb. of ration and the other was kept as a check. These birds were mated at two different periods. The eggs were saved and incubated to observe the effects of boron on fertility and hatchability. The hens were fed boron in the ration for 14 weeks before saving eggs in the first period and 22 weeks in the second period.

Fly Control—Fly development in manure from hens fed different levels of boron was reduced in all tests.

In the 1957 test of 135 days, the average adult flies per trap were:

Rate Polybor-3 per 100 lb. ration	Avg. adult flies per trap, No.
4 oz.	5
2 oz.	7
1 oz.	8
No treatment	188

In the 1958 test of 183 days, the average number of fly larvae and pupae was:

Rate Polybor-3 per 100 lb. ration	Avg. larvae and pupae per lb. manure, No.
4 oz.	0
3 oz.	0
2 oz.	0
1 oz.	0
½ oz.	67
¼ oz.	88
Check	86

Manure under cages of hens fed 1 oz. or more of boron was much drier and had less odor than the check. Water appears to evaporate much faster from manure of hens fed boron than of those not receiving boron. There were no watery droppings from hens fed boron, as are often seen in some cage houses during extreme hot weather. Fresh droppings from hens fed boron and hens receiving no boron were analyzed and found to contain about 70% moisture. The apparent dry condition of the manure from hens fed boron may be the result of no fly larvae in the manure, it was pointed out.

Egg Production—Polybor-3 fed at a level of 4 oz. per 100 lb. of ration reduced feed intake and markedly reduced egg production. However, 1 oz. of boron or less in the feed had no such effect. Birds receiving a ration of 3 oz. of Polybor-3 or less showed no visible outward effects.

The egg production for these tests indicates that 1 oz. or less per 100 lb. of ration did not affect rate of egg production.

In the 1957 test of 135 days, the rate of production was 52% for the 4 oz. per 100 lb. of feed; 57% for the 2 oz. treatment, and 61% for the 1 oz. treatment. In the 1958 test of 183 days the rates of production were: 42%, 4 oz. treatment; 50% for the 3 oz. treatment; 55% for the 2 oz. treatment; 61% for the 1 oz. treatment; 71% for the ½ oz. treatment; 65% for the ¼ oz. treatment, and 58% for the check. In the 1958 test of 180 days, the rate of production was 45% for the 4 oz. treatment and 51% for the check.

Fertility and Hatchability—A flock of 200 Leghorn hens on floor with 10 males were fed an all mash ration

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A GROWTH COMPANY . . .
10 NEW PRODUCTS IN THE LAST 5 YEARS

containing 4 oz. of Polybor-3 for a period of 14 weeks before saving aggs to test fertility and hatchability. The same number was used as a check. All eggs were saved for two days for this test. A total of 208 eggs from boron-fed hens was incubated and the fertility and hatchability were 89.4 and 81.2%, respectively. There were 229 eggs incubated from control pens with 82.9% fertility and 72.5% hatchability. Chicks from these eggs were brooded in batteries and fed normal broiler ration for one month. There were no chick losses from boron-fed hens.

In the second test conducted on the same birds eight weeks later, 180 eggs were incubated from each pen. The fertility of eggs from boron-fed hens was 80% and hatchabiilty was 53.8%, whereas eggs from the control pen had 77.2% fertility and 70% hatchability. These chicks were brooded in battery brooders and fed a normal ration. Mortality for these chicks was approximately the same for both groups. These data indicate the 4 oz. of Polybor-3 per 100 lb. breeder ration had no serious effect on fertility or livability of chicks. However, this level of boron reduced egg production and produced physical signs of toxicity in some hens.

Boron in Egg and Tissues — Polybor-3 fed to layers at the rate of 4 oz. per 100 lb. of ration increased the boron content of the eggs and body tissues.

Boron Content of Eggs and Fowl Tissues, 1957*

Item	Control group ppm.	4 oz. per 100 lb. feed Polybor-3 for 135 days ppm.
Yolk	5.4	36.0
Albumen	17.5	39.5
Breast meat	7.5	30.0
Liver	1.7	62.4
Fat	1.8	45.1
Kidney	3.1	45.1
Feathers	...	97.5

*Boron content determined by Agronomy and Soils Department.

The boron content of eggs and body tissues of birds fed this high level was not as high as is normally found in some other foods. For example, dried apricots had 38 p.p.m., carrots, 41.6 p.p.m., and turnips, 30.6 p.p.m.

In 1958, hens fed a ration containing different levels of boron for 183 days produced eggs containing these amounts of boron:

Boron Content of Egg Parts

Polybor-3 100 lb. feed	Boron in albumen 90 days ppm.	Boron in albumen 183 days ppm.	Boron in yolk 90 days ppm.	Boron in yolk 183 days ppm.
4 oz.	15.4	10.0	3.9	3.7
3 oz.	8.1	8.1	3.7	2.5
2 oz.	7.3	6.9	2.8	2.5
1 oz.	4.9	5.6	2.5	3.1
½ oz.	4.5	3.7	2.4	2.5
¼ oz.	2.9	3.1	2.0	1.3
0	2.5	1.9	1.8	1.3

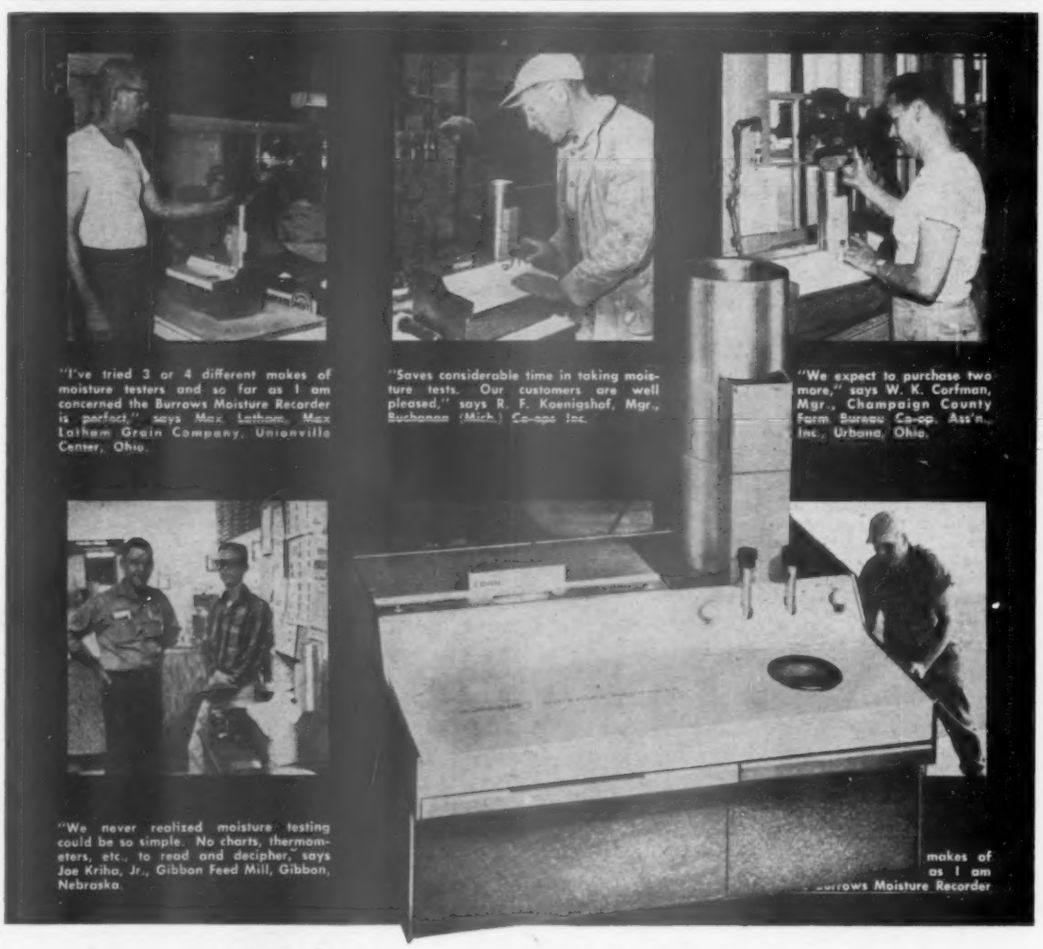
Summary — Results of these tests showed that: Polybor-3 fed in small quantities to laying hens will greatly reduce fly development in manure under cages; boron added to feed and consumed by hens increases the boron found in eggs and body tissues; the addition of 1-2 oz. of Polybor-3 per 100 lb. of ration will control flies in cage houses and will not greatly increase boron content of eggs produced; the addition of 4 oz. of Polybor-3 per 100 lb. of ration will reduce egg production and show signs of toxicity, and no harmful effects to fertility and hatchability of eggs from hens fed this ration for 14 weeks were noted, but hatchability was reduced when this level was fed for 22 weeks.

The Pure Food and Drug Administration must give permission before Polybor-3 can be mixed in the poultry ration.

FEED MILL SOLD

COLFAX, IOWA—Mrs. John Turnis has sold the Colfax Feed Mill to Lloyd Milbourn, Altoona, Iowa. The firm's name will be the Colfax Milling Co.

BIB TYING CEREMONY—Visitors from Australia, Dr. and Mrs. Don Walker (he's a professor at the University of Sydney) were among the first to don special bibs as protection against "crumb fallout" before eating a corn-crisped chicken supper during the Centennial Nutrition Conference in Kansas City Oct. 23-25. Assisting them are Shirley Thornton (left), Dr. Salsbury's Laboratories, Ft. Dodge, Iowa, and Les Cunningham, Percy Kent Bag Co., Inc., Kansas City. The bag firm furnished the bibs which proclaimed the centennial anniversary of "service to mankind" performed by land-grant colleges and universities. The eight states outlined on the bibs are those in the area served by the Midwest Feed Manufacturers Assn., sponsor of the Centennial Nutrition Conference.


"I've tried 3 or 4 different makes of moisture testers and so far as I am concerned the Burrows Moisture Recorder is perfect," says Max Latham, Max Latham Grain Company, Unionville Center, Ohio.
"Saves considerable time in taking moisture tests. Our customers are well pleased," says R. F. Koenigshof, Mgr., Buchanan (Mich.) Co-ops Inc.
"We expect to purchase two more," says W. K. Corfman, Mgr., Champaign County Farm Bureau Co-op. Ass'n., Inc., Urbana, Ohio.
"We never realized moisture testing could be so simple. No charts, thermometers, etc., to read and decipher," says Joe Kriha, Jr., Gibbon Feed Mill, Gibbon, Nebraska.
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DIVISION EXECUTIVES—Shown above are four of the executives in the Agricultural Chemicals Division of Monsanto Chemical Co. They are, left to right: Tom K. Smith, Jr., vice president and general manager; Dr. Richard S. Gordon, director of research; J. Paul Ekberg, director of marketing, and James H. Senger, director of development.

Monsanto Biochemists Arrest Aging

ST. LOUIS—In a dedication speech at the new Monsanto Chemical Co. multi-million dollar research center here Oct. 27, it was disclosed that that company's biochemists have successfully arrested and postponed the aging process in baby chicks and mice by specific changes in the amino acid balance of their diets.

Chicks of 7 to 10 days age have been "suspended" at that level of physiological development for periods of six to nine months without impairment of their normal health or behavior. Restored to a normal diet, they resumed their natural rate of growth and matured without ill effects.

This fundamental research in physiological nutrition has been part of a Monsanto program aimed at development of new chemical feed additives, according to Dr. Carroll A. Hochwalt, the company's vice president for research, development and basic engineering.

Dr. Hochwalt spoke of this and other long-range exploratory research in a number of areas as the firm dedicated its new research complex here.

Newly weaned mice also were arrested at that point of their maturation for approximately one year and then "triggered" back to natural growth, he commented. The natural life span of the mice was extended by the amount of time for which their maturation had been postponed, Dr. Hochwalt said. This was approximately a doubling of their normal life span, he pointed out.

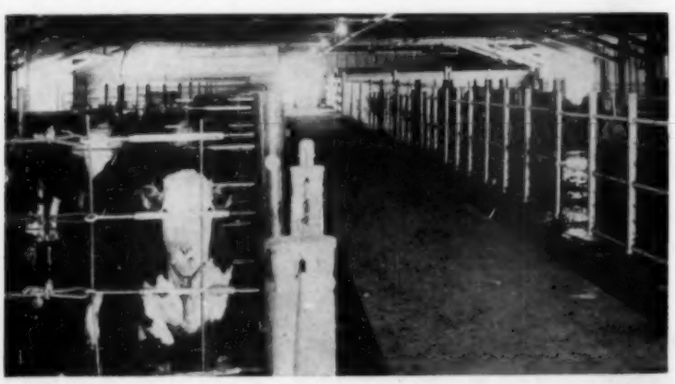
In the case of the baby chicks, it was stated that sexual maturity was postponed for a period equivalent to their suspended growth, suggesting an equivalent extension of their normal life span. However, successful results were obtainable with chicks and mice only in the pre-puberty phase of development.

Dr. Hochwalt said that it is impossible to speculate at this time on the possible implications or ramifications of suspended maturation through dietary control. However, he said that the finding proved to be of such interest to the National Institutes of Health that it is sponsoring further Monsanto research in this area, looking toward the possible use of such growth suspension as a tool of therapy.

"Monsanto's fundamental research in poultry nutrition has led to high efficiency feeds which, under laboratory conditions, produce a pound of weight gain for each pound of feed in chickens up to the point of marketable weight," he said. "Commercial feeds now have an efficiency of 1 lb. of weight gain to each 2 lb. of feed. Only a few years ago, 3 to 4 lb. of feed were required per pound of weight gain. The company's new feed additives have contributed significantly to this improvement in feed performance."

A wide variety of other agricultural and research work was also reported on by Dr. Hochwalt in connection with the research center dedication.

RESEARCH CENTER—Monsanto Chemical Co. has just dedicated this research laboratory complex adjacent to the firm's general offices in suburban Creve Coeur, Mo. The firm's general offices are visible in the background. It is said that the new research center is "one of the most modern and best equipped all-purpose research facilities in the U.S."



STEER BARN—This steer barn at Monsanto's agricultural research farm at St. Charles, Mo., accommodates 100 animals used in nutritive studies as feed chemicals are developed for market.

ADM Transformation At Half-Way Mark, Stockholders Told

MINNEAPOLIS—John H. Daniels, president of Archer-Daniels-Midland Co., has reported "encouraging progress" in the program to transform ADM into a marketing-oriented company devoted to processing chemical and agricultural products.

Addressing the annual meeting of shareholders at ADM's general offices in Minneapolis, Mr. Daniels said the company now is at about the halfway mark in the five-year plan of transition.

"Financial results for the first half have not reached expectations," he said, "but your management is pleased with the over-all progress as well as encouraged by the increase in profits in the past fiscal year."

Mr. Daniels told shareholders that the upward trend in operating income continued in the July-September quarter, the first in ADM's current fiscal year. Net operating earnings for the quarter were $816,106, equal to 51¢ a share.

"On the surface, this compares unfavorably with net earnings of $1,130,348, or 72¢ a share, a year ago," the ADM president said. "However, last year's earnings for the July-September quarter included 24¢ a share in nonrecurring capital gains realized from the sale of certain assets. Since there are no non-recurring capital gains to report this past quarter, we actually earned 51¢ a share from operations, compared with 48¢ a year ago."

Mr. Daniels said he expects second quarter operating profits to continue the trend of improvement over a year ago.

The board of directors voted a dividend of 50¢ a share, payable Dec. 1 to shareholders of record Nov. 16. ADM has paid continuous quarterly cash dividends for more than 30 years. There are 1,589,929 shares of stock outstanding.

Shareholders reelected the following members of the board, headed by Thomas L. Daniels, chairman, and John Daniels:

Walter G. Andrews, executive vice president-chemical group; S. M. Archer, Jr., investments, Pebble Beach, Cal.; Robert W. Austin, professor, Harvard School of Business Administration, Boston; Crowdus Baker, president, Sears, Roebuck & Co., Chicago; Erwin A. Olson, executive vice president-agricultural group; Samuel H. Rogers, senior vice president, Northwestern National Bank, Minneapolis, and Burton W. Schroeder, administrative vice president.

Henry W. Collins, Portland, Ore., long-time vice president in charge of ADM's west coast grain operations and a member of the board of directors since 1953, announced his retirement from the board. He was elected a director emeritus.

Mr. Daniels told the shareholders that ADM's agricultural group and overseas operations showed good improvement over a year ago during the first quarter, but that the slower pace of the chemical group reflects "the continuing lack of dynamic growth in much of the nation's industrial economy."

One of America's largest industrial corporations, ADM serves every segment of industry and operates plants, elevators and mines in 20 states.

CARGILL NAMES PLANT HEAD

MINNEAPOLIS — Uli Sander has been named superintendent of Cargill, Inc.'s vegetable oil plant in San Francisco. He succeeds Robert Hubbard, Hillsborough, who is being transferred to a position in Cargill's grain division headquarters in Minneapolis. Mr. Hubbard held the San Francisco post since 1955.

Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
October, 1961	2.4	2.6	3.6	2.6	1.9	3.0	3.1	2.9	2.7	2.0
September, 1961	2.5	2.7	3.6	2.7	2.1	3.0	3.0	2.9	2.8	2.1
October, 1960	3.6	3.6	4.7	3.9	3.4	3.8	3.9	3.6	3.4	2.9
Average (1950-59)	5.0									
Average (Oct., 1950-59)	4.5									
Broilers:										
October, 1961	2.6	3.0	3.5	2.7	2.9	2.6	2.5	2.5	3.2	3.0
September, 1961	2.5	3.1	3.4	2.6	2.8	2.5	2.3	2.4	3.2	2.8
October, 1960	3.5	3.8	4.5	3.7	3.8	3.4	3.3	3.5	3.9	3.9
TURKEY-FEED—										
October, 1961	5.2	7.3	7.5	5.5	5.5	5.4	6.3	5.5	5.7	4.5
September, 1961	5.4	7.2	7.6	5.9	5.7	5.5	6.1	5.9	5.9	4.7
October, 1960	7.8	8.2	8.6	8.2	9.4	7.2	7.8	7.9	7.4	6.9
Average (1950-59)	8.0									
Average (Oct., 1950-59)	7.8									
EGG-FEED—										
October, 1961	11.1	12.2	12.2	10.9	10.1	11.5	12.3	11.7	11.0	9.7
September, 1961	10.4	12.0	11.8	10.2	9.4	10.7	11.4	11.2	11.0	8.9
October, 1960	13.4	14.7	14.7	13.2	12.7	13.8	13.7	13.4	12.4	11.3
Average (1950-59)	10.7									
Average (Oct., 1950-59)	11.8									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
October, 1961	1.56	1.47	1.55	1.67	1.69	1.64	1.44
September, 1961	1.50	1.44	1.47	1.59	1.65	1.54	1.39
October, 1960	1.58	1.53	1.55	1.68	1.67	1.68	1.45
Average (1950-59)	1.31						
Average (Oct., 1950-59)	1.46						
BUTTERFAT-FEED—							
October, 1961	25.6	...	21.3	27.3	...	17.7	18.8
September, 1961	25.0	...	20.9	26.7	...	17.1	18.6
October, 1960	25.5	...	21.2	28.0	...	17.4	19.0
Average (1950-59)	22.4						
Average (Oct., 1950-59)	23.2						

	U.S.	North Cent.
HOG-CORN—		
October, 1961	16.1	16.4
September, 1961	16.8	17.3
October, 1960	16.9	17.5
Average (1960-59)	13.7	14.1
Average (1950-59)	13.7	14.1
Average (Oct., 1950-59)	13.9	14.2

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

'Go Slow' Is Advice Given Poultrymen

MORTON, MISS. — A member of Congress has suggested to poultry producers in his home state of Mississippi that they go slow in order to avoid "jumping from the frying pan into the fire" in the present broiler industry troubles.

Rep. J. L. Whitten (D., Miss.), speaking before a group of poultrymen of the Morton area, stressed that the pressing problem in the industry is marketing.

His subcommittee on appropriations for agriculture, Rep. Whitten said, is conducting an all-out investigation into charges of price fixing monopolies.

The investigation is to determine if there has been "discriminatory or deceptive practices, controlling prices and conspiracies to create monopolies" that would be a violation of federal statutes.

Rep. Whitten pointed out that the five largest chain organizations alone accounted for 21% of a $53 billion sum in food sales in 1960. Corporate chains, he said, received 40% and voluntary chains 47%.

The use of poultry as a loss leader to draw customers results in increased volume, but also brings lower prices to producers and a subsequent reduction in pork, lamb and beef.

"When a meat is used poultry sales are off, and the price for the poultry producer is down on a big day," he said.

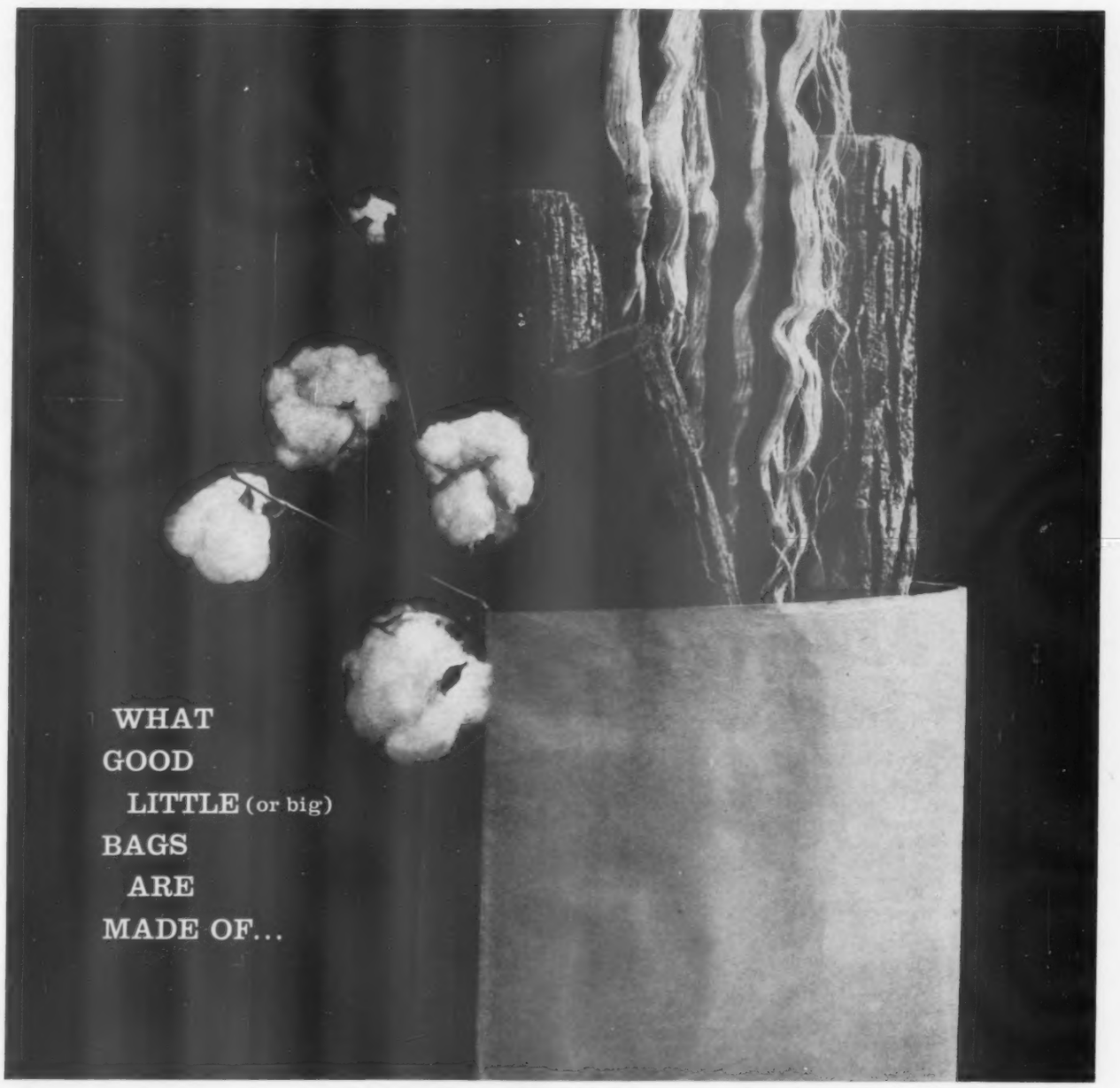
One of the big problems in the poultry business, Rep. Whitten said, is that the seller has to sell, but the buyer doesn't have to buy.

"You folks must have some way to handle the problem of shipping unsold poultry north and letting the buyer hold off until you are forced to lower your price. The pressing problem now is marketing, and I am convinced that, under present conditions and practices, you are sitting ducks, or, rather, chicks," he said.

Dr. Salsbury's on TV

CHARLES CITY, IOWA—Dr. Salsbury's Laboratories, Charles City, was featured in a network TV production, "New Horizons," Oct. 29, as one of a series highlighting "successful industries over the nation which have helped change the American pattern of living."

Dr. Salsbury's was featured as a family-owned company which has risen to a leading position in the poultry and livestock health product field. H. G. Bos, the firm's vice president in charge of marketing, was interviewed by the production's narrator, Basil Rathbone.



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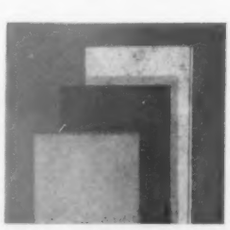
A full line of bags is another example of St. Regis *Packaging-in-Depth*. This complete bag service assures you of the *right* bag, the *right* machinery to pack it, plus the services of a highly-skilled engineering staff. To meet your *future* needs, our *Packaging-in-Depth* program also includes continued research to develop improved packaging methods and economies.



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No. 7756—Medication Purchase Premium

A new nf-180 Dust promotion has been announced by Hess & Clark to strengthen sales of the product before and during the severe chronic respiratory disease season by offering dealers and poultrymen their choice of two special offers.

Hess & Clark is offering a free Hudson Bantam Duster valued at $10.95 to dealers who buy four cases of nf-180 (48-1,000 dose jars retail-

ing for $4 per jar) at a dealer cost of $3 per jar. A two-case order at the same dealer cost of $3 entitles the dealer to receive a free "Repair 'n Air" tire kit worth $5. Both offers are effective through February, 1962.

nf-180 Dust is an airborne poultry medication for the treatment of CRD in chickens. It is packaged in 100 gram jars (25 grams of furazolidone in a special base) sufficient to treat 1,000 birds. nf-180 Dust remains suspended in the air to be inhaled by birds for over 30 minutes.

For additional information, check No. 7756 on the coupon and mail.

No. 7757—Four Vibrators

Four new AiroViber Vibrators have been added to the Viber Co. line to expand the range of applications for these pneumatic, ball-type external vibrators. AiroViber Vibrators are now offered in eight sizes with ball diameters varying from 13/32 in. to 1⅞ in. Maximum centrifugal force produced by the vibrators ranges from 75 lb. at 20,000 r.p.m. for the smallest size to 800 lb. at 4,900 r.p.m. for the largest (r.p.m.'s based on 100 psi air pressure).

Compressed air propels the steel ball around a hardened, ground steel track within the AiroViber housing

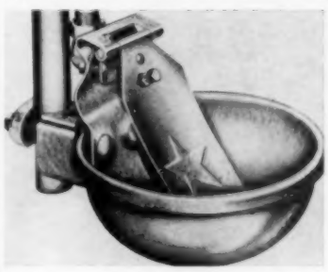
to produce the vibration. An AiroViber feature is interchangeability of ball sizes. This permits application of the exact amount of force required, and makes it possible to use the same vibrator for a variety of materials.

AiroVibers are mounted directly to the walls of bins, hoppers, chutes, feeders, sorting tables, screens, etc., to facilitate the handling of bulk materials. The rotary vibration prevents arching and jamming of the material.

For additional information, check No. 7757 on the coupon and mail.

No. 7758—Guarantee On Water Bowl

The new Starline non-siphoning, steel Water Bowl, NS1011, is now guaranteed for five years against de-



fects in material or workmanship, according to Starline, Inc., the manufacturer.

The unit, made entirely of steel, iron and brass, features a built-in water-flow control, a "trouble-free" brass valve, a ¾ in. rotating universal inlet and a paddle which swings horizontally to the side of the bowl.

The NS-1011 Water Bowl and paddle are formed from 14-gauge, galvanized steel, and the fittings are malleable iron. The unit comes preassembled, complete with a heavy steel bracket which allows quick installation on either 1⅝ in. OD steel uprights or wood.

For additional information, check No. 7758 on the coupon and mail.

No. 7759—Folder On Jetslingers

Link-Belt Co. has issued a six-page folder on four types of Jetslingers, machines equipped with short, high-speed belts that hurl free-flowing bulk materials into areas inaccessible to other mechanical means.

Ship trimming, boxcar and truck loading, warehouse and ground stor-

age distribution of grain and other bulk materials are done by Jetslingers.

The booklet describes and illustrates four models—wheel mounted, suspended swivel mounted, wheel mounted for low headroom and bracket suspended swivel mounted.

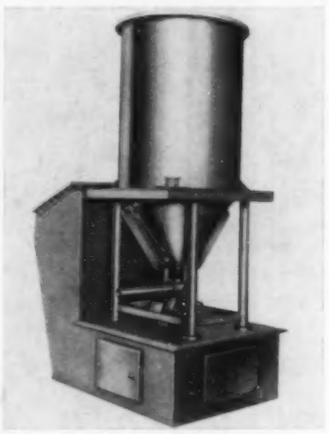
Dimensional data, line drawings and photographs of typical installations are included.

For a copy of the folder, check No. 7759 on the coupon and mail.

No. 7760—Metering of Dry Materials

A high speed, automatic net weight loss feeder has been developed by the Thayer Scale Corp. to provide accurate metering of dry materials for industrial batching or continuous flow processes.

The feed hopper, or bin, is part of the weighing mechanism of a Thayer Scale, and the material is carried



away by a vibratory feeder. The rate at which the system feeds the material is set in grams or other units per minute, by means of three knobs on the control panel. The knobs set up gear ratios in a transmission box, which in turn controls the rate at which a synchronous motor drives a flexible shaft. The shaft operates a worm screw on the end of the weigh-beam, on which the poise is suspended.

A differential transformer on the end of the beam, acting as a balance detector, transmits an output signal to an amplifier which feeds back to the motor drive unit. This signal reflects a demand for greater or lesser flow of material, and controls the action of the vibratory feeder, increasing or decreasing its amplitude and, thereby, affecting the rate of flow.

For additional information, check No. 7760 on the coupon and mail.

No. 7761—Sow Milking Tablets

Agri-Tech, Inc., has announced the availability of MOM, a thyroactive lactation stimulant which promises

increased milk flow in lactating sows and gilts.

MOM comes in tablet form and can be fed whole on top of the lactating sow ration or crumbled and mixed with the ration. Good palatability has been reported, according to the manufacturer. Lactating sows and gilts should be fed MOM from 3-4 days before farrowing through to weaning, feeding directions indicate.

Iowa State University and University of Nebraska research shows sig-

Send me information on the items marked:

- ☐ No. 7756—Purchase Premium
- ☐ No. 7757—Four Vibrators
- ☐ No. 7758—Water Bowl
- ☐ No. 7759—Folder on Jetslingers
- ☐ No. 7760—Metering of Materials
- ☐ No. 7761—Sow Milking Tablets
- ☐ No. 7762—Bag Filling, Closing
- ☐ No. 7763—Feed Phosphate Film
- ☐ No. 7764—Hog Farrowing Unit
- ☐ No. 7765—Tracer Brochure
- ☐ No. 7766—Specification Data

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nificant results in lowered baby pig mortality and greater weight gains prior to weaning when the sow is fed thyroprotein (iodinated casein).

For additional information, check No. 7761 on the coupon and mail.

No. 7762—Automatic Bag Filling, Closing

Bemis Bro. Bag Co. has announced production of a "high speed, economical, effective and completely automatic" system of filling and closing multiwall bags. First commercial installations are expected to be made before the end of the year.

The system combines Bemis automatic filler-scale, bag feeder and conveyor with a newly-devised automatic closing machine. It is capable of filling and closing up to 20 bags (2,000 lb.) of most applicable products a minute, according to the company.

The system is applicable to any free-flowing product using open-mouth paper multiwall bags, such as

feed and fertilizer. It handles bags of various sizes, gusset or flat-tubed, with or without closing tape. No operator is required. A part-time attendant must periodically refill the automatic bag feeder, which has a capacity of 400 bags.

For additional information, check No. 7762 on the coupon and mail.

No. 7763—Feed Phosphate Film

"The True Measure of Feed Phosphates," a feed industry film, has been produced by International Minerals & Chemical Corp. In the movie, scientists demonstrate the bone ash test, regarded by many researchers as the most effective way of determining the biological availability of different phosphate sources.

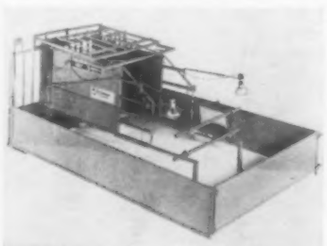
The 18-minute, technicolor film is currently being previewed to feed manufacturers by IMC sales agents, and will be available to universities, county agents, vo-ag teachers, farm youth groups and feed industry trade associations.

The bone-ash test—or biological assay—was developed by IMC's director of research, Dr. M. B. Gillis, whose pioneering work at Cornell University won industry-wide recognition.

For additional information, check No. 7763 on the coupon and mail.

No. 7764—Hog Farrowing Unit

The Big Dutchman hog equipment division has announced it is now offering a new multiple farrowing unit. Big Dutchman says the unit consists of a pen within a pen that offers both



the sow and her litter separate rations and drinking water, while protecting the litter from being injured by the mother.

The unit includes two heat lamps that can be adjusted to give the right amount of heat to the baby pigs, draft barrier guards to protect the litter from drafts, yet permits ventilation and air circulation for the sow.

The sow feeder and waterer and the creep feeder and waterer are removable for cleaning and sanitizing, both feeders have positive feed flow control and none of the containers can be overturned, the manufacturer states. Three units provide a growing area for 30 pigs with 5½ sq. ft. per pig.

For additional information, check No. 7764 on the coupon and mail.

No. 7765—Tracer Technique Brochure

Micro Tracers, Inc., has issued a new brochure, "Five Minute Assays," describing a non-radioactive tracer technique for the detection and de-

don't worry.. it's Locked in!

Not the flavor . . . but rather the potency in Elanco's new **Micro-Pen,** special coated penicillin G. Micro-Pen Crystals (75 microns) are far smaller than commonly used crystals (300 microns).

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Another advantage is uniform dispersion 'cause there's more of 'em, 'cause they're smaller. For all the facts, write . . .

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grease seal collars

This new design from Landers completely eliminates the inner grease seal nut and the press collar which together cost $10.80. The Landers Collar needs no press or hammer to assemble and costs only $3.00 each.

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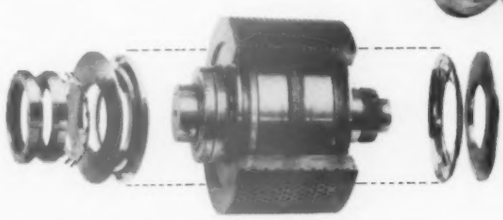
These 35c metal safety seals eliminate leather and felt seals and, of course, will not leak, rot, dry out, crack or break as ordinary seals will. The seals seat in a metal-to-metal bond that gives positive bearing protection.



Cutaway view of Landers Dimple-Faced roller, model LM 66 WFJ

Save money in original cost, in less installation time and downtime (with no spot welding or pressing to do), and by carrying a smaller inventory. The only replacement parts needed are the safety seals.

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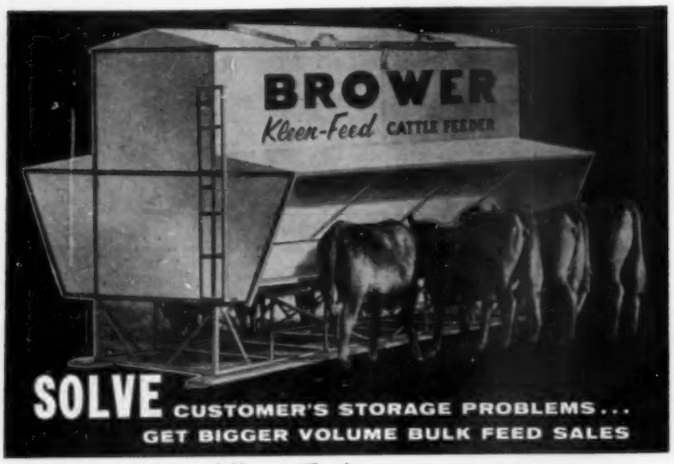

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Now in two sizes: 15 ft. feeder has 250 bushel capacity . . . 7½ ft. feeder has 125 bushel capacity

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1000-lb. Full Capacity Beam Scale
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Dumps Through 8"x13" Gate Just Ahead of Axle

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termination of micro-ingredients in dry mixes, and for the determination of completeness of mix.

For a copy of the brochure, check No. 7765 and mail.

No. 7766—Feeder Specification Data

Three-page specification data on B-I-F Industries Belt Gravimetric Feeder, Model 37-04 is available, the company announced.

Maintenance of a constant weight of material on a moving belt by actuation of a positive-acting feed gate is the principle of operation for the feeder. Effective and accurate use of this concept is said to have resulted in a feeder that is ideally suited for the precise feeding, by weight, of almost any dry, flowable material, such as foods, feed, flour, plastics, chemicals, minerals and ores.

The manufacturer states the 37-04 can attain a feed rate of as much as 3,000 lb. per minute with 50 lb. per cu. ft. material.

For a copy of the specification data, check No. 7766 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7711—Portable loader, Ft. Worth Steel & Machinery Co.

No. 7712—Livestock tablets, Myzon Laboratories.

No. 7713—Poultry house heater, Electronics, Inc.

No. 7714—Antibiotic treatment for livestock, Abbott Laboratories.

No. 7715—Grain drier literature, Aeroglide Corp.

No. 7716—Steam generator, Clayton Manufacturing Co.

No. 7717—Steel building booklet, The Columbian Steel Tank Co.

No. 7718—Bulk feed bin, Chore-Boy Manufacturing Co.

Grain Moisture Study, Radson Engineering Co., Macon, Ill.—25¢

No. 7719—Self-service rodent killer, Vineland Laboratories.

No. 7720—Portable pneumatic conveyor, The Buhler Corporation.

No. 7721—Mobile feed mill route literature, Seco, Inc.

No. 7722—Service and equipment brochure, General American Transporation Corp.

No. 7723—Grain drying bulletin, Farm Fans, Inc.

No. 7724—Grain temperature probe, Douglas Chemical Co.

No. 7725—Plastic egg collection flat, Automatic Poultry Feeder Co.

No. 7726—Scale control system, Cardinal Scale Manufacturing Co.

No. 7727—Pig starter additive, Thompson-Hayward Chemical Co.

No. 7728—Molasses pellet mill, Sprout, Waldron & Co., Inc.

No. 7729—Poultry house plans, Keen Manufacturing Corp.

No. 7730—Hog disease control guide, Vineland Laboratories, Inc.

No. 7731—Baler twine, Shellbuilder Co.

No. 7732—Polyvalent bronchitis fraction, Delaware Poultry Laboratories, Inc.

No. 7733—Protein concentrate, Knudsen Creamery Co.

No. 7734—Dehydrated alfalfa booklet, American Dehydrators Assn.

No. 7735—Formulation service, Peter Hand Foundation.

No. 7736—Continuous flow grain dryer, Ace Supply & Equipment Co., Inc.

No. 7737—Literature on die cover, Sprout, Waldron & Co., Inc.

No. 7738—Portable moisture tester, Seedburo Equipment Co.

No. 7739—Booklet on dehydrated alfalfa, American Dehydrators Assn.

No. 7740—Polyethylene valve insert, Union Bag-Camp Paper Corp.

No. 7741—Grain storage building, Butler Manufacturing Co.

No. 7742—Premix convenience pack, Vit-A-Way, Inc.

No. 7743—Portable grinder-mixer, Wetmore Pulverizer & Machinery Co.

No. 7744—Concentrate storage bin, Leach Manufacturing Co.

No. 7745—Fowl cholera bacterin, Dorn & Mitchell Laboratories, Inc.

No. 7746—Poultry watering trough, L. A. Pockman Manufacturing Co.

No. 7747—Poultry vaccines, L & M Laboratories.

No. 7748—Automatic clearing valve, Myers-Sherman Co.

No. 7749—Slide diverter valve, Sprout, Waldron & Co., Inc.

No. 7750—Foot rot bulletin, William Cooper & Nephews, Inc.

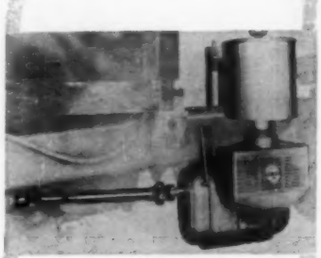
No. 7751—Screw conveyor brochure, Thomas Conveyor Co.

No. 7752—Bag, carton printer, Minneapolis Sewing Machine Co.

No. 7753—Antibiotic sales premium, Merck & Co., Inc.

No. 7754—Brochure on equipment, Pulverizing Machinery Co.

No. 7755—Make-up air units, Robbins & Myers, Inc.



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Standard units available in capacities to 2300 cfm, and pressures to 15 psig. Supplied packaged for power take-off, or with gasoline or electric drive... there's a "Series 88" blower for long, dependable service in your feed handling equipment or operation.

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Swine Reports Given at Oregon Event

CORVALLIS, ORE.—The third annual Swine Day at Oregon State University, Corvallis, included a variety of topics pertaining to swine.

The day-long program consisted of seven presentations by speakers, a panel discussion, a tour of management experiments at the swine barn of the university plus a luncheon with an all-pork menu. Sponsors were Oregon State University and the Western Oregon Livestock Assn.

Speeches covered such topics as management influence on litter size, iron deficiency anemia in baby pigs, feed efficiency and choice of market weight and confinement rearing. Following are summaries of these four speeches.

Management Influence on Litter Size—Dr. H. L. Self, in charge of outlying experimental farms, Iowa State University, Ames, spoke on the influence of management on litter size.

Pointing out heredity and environment are the two factors responsible for performance of all farm livestock, and that the heredity variation in litter size has been estimated at less than 10%, Dr. Self said "the producer has an opportunity to alter litter size a great deal through his management program," this accounting for the other 90%.

Management suggestions made by Dr. Self include:

Select gilts of the correct type from large defect-free litters.

Grow the gilts out on a ration permitting adequate growth without fatness. This can be done by hand-feeding limited quantities of a high-energy ration or by self-feeding a low-energy ration (a ration high in bulk or fiber).

About 10 days to two weeks before the breeding season begins, increase nutrient intake to the equivalent of a full feed and continue until 4-5 days after breeding.

Limit feed during the first two thirds of gestation to allow a gain of about 1 lb. per day. A slight increase in nutrient intake is permissible during the last one third of the pregnancy period. In no case should drastic changes be made in management and feeding during the last 2-3 weeks of gestation.

If the breeding season or the gestation period occurs during hot seasons, arrangements should be made to keep the breeding herd—both males and females—cool and comfortable.

Iron Deficiency Anemia in Baby Pigs—Dr. J. E. Oldfield, professor in the department of dairy and animal husbandry, Oregon State University, said considerable evidence has been built up that anemia is a frequently-occurring and important contributor to baby pig losses.

Research indicates, he said, that baby pigs are born with fairly adequate iron supplies, and that the problem is one of maintaining these supplies through an adequate diet or by other means, such as injection.

If pigs are to be farrowed and raised to weaning on concrete, some preventive measure against iron deficiency anemia is a necessity, Dr. Oldfield said. Provision of clean soil in pens, or oral or intramuscular administration of appropriate iron compounds are all useful treatments.

Experience shows that oral preparations must be given repeatedly, while injections may be effective in a single dose. It is possible, he said, that future developments in baby pig starter ration formulas may result in more palatable mixes that pigs will eat at earlier ages. Improvement of rations may offer relief to the anemia situation through normal feed practice.

Feed Efficiency and Choice of Market Weight for Swine—Dr. David C. England, associate professor, department of dairy and animal husbandry, Oregon State University; T. P. Davidson, acting superintendent of the Umatilla branch experiment station, Hermiston, and R. C. Cooper, experiment farmer, Umatilla branch experiment station, presented data on a study on feed efficiency and choice of market weight for swine.

Their report compared feed efficiencies of pigs during the period of 175-200 lb. with feed efficiencies during the period of 60-175 lb., and examined the economic desirability, from the producer's standpoint, of marketing hogs at the two weights.

With three test groups, average differences in feed requirements per hundred pounds of gain were 30 lb., 75 lb., and 16 lb. for the three experiments. In the first, only two of 10 pens showed a decreased feed requirement after reaching 175 lb.; in the second, two of 21 pens showed a decreased feed requirement after reaching 175 lb., and, in the third, eight of 18 pens showed a decreased feed requirement after reaching 175 lb., though some environmental change is held responsible for the large number of pens showing decreased feed requirements in the last period. Likewise, environmental factors may well have caused excessively increased feed requirements after 175 lb. weight in the second experiment.

On the basis of the experiments, selling at a weight of 200 lb. would be more profitable than selling at 175 lb. any time the price per pound of live hogs would buy more than 4 lb. of feed, unless the selling price per pound is lower at 200 lb. than at 175 lb.

The following conclusions were drawn from the data:

Assuming no favorable change in environmental conditions after 175 lb. weight is reached, feed requirement per pound of gain will continue to increase as weight increases.

Favorable changes in environment may largely or completely offset the normally expected increase in feed requirement as weight increases.

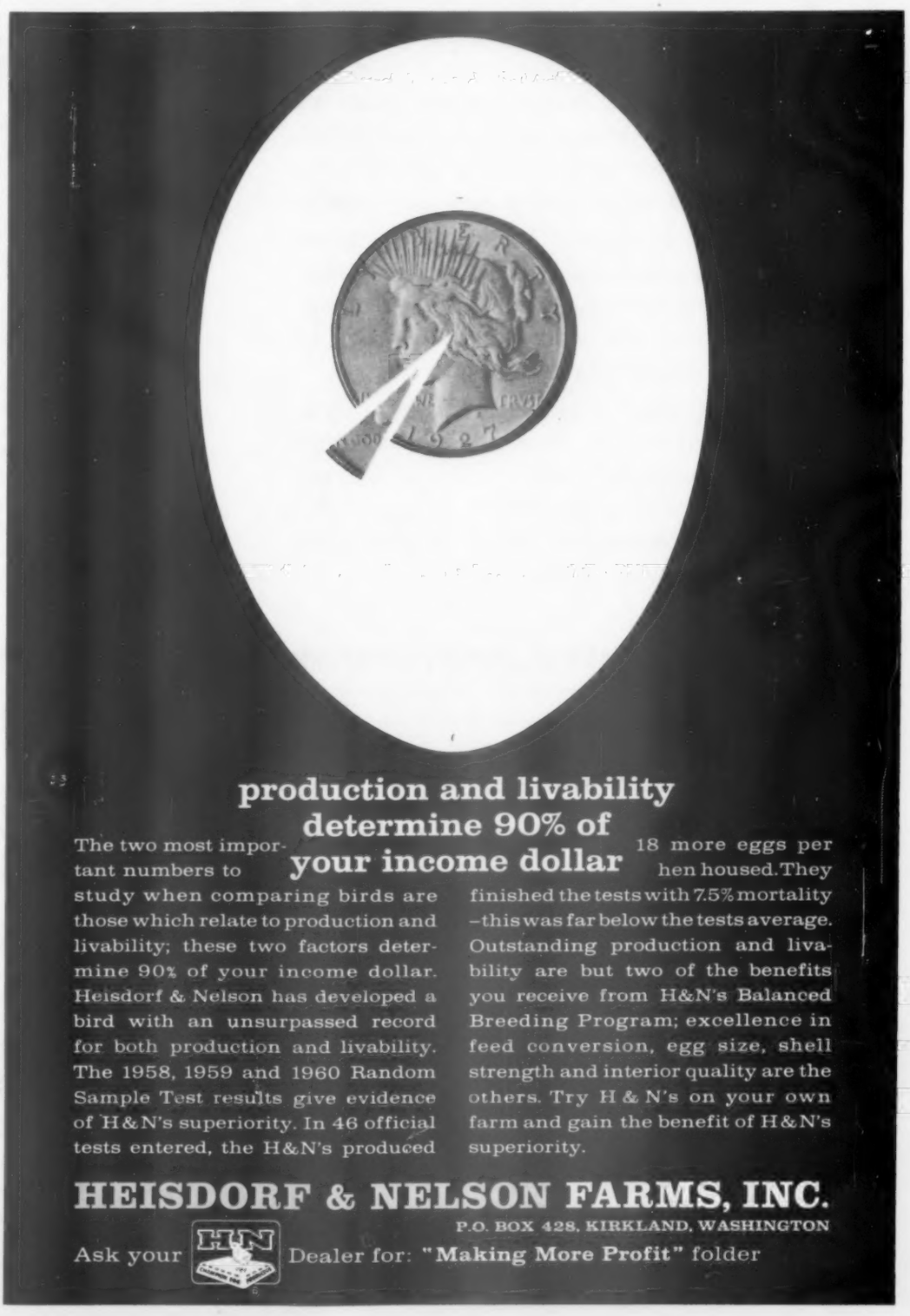
The feed requirement of a group of slow starting feeders may improve at heavier weights under good conditions if fast growth occurs at the heavier weight.

Marketing at heavier as compared to lighter weight must take into account both feed requirements and relative price per pound at the two weights.

Choice of most desirable market weight can be more intelligently made when growth rate and feed efficiency data are available.

These data do not include information on carcass composition. Meat-type hogs would be expected to have more desirable carcasses at either weight than would fat hogs. Selling price per pound would be expected to decrease more sharply for fat hogs than for meat-type hogs as weight increases.

Confinement Rearing of Swine—Confinement rearing of swine, according to Dudley L. Sitton, Carlton, Oregon swine producer, is "one of the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your income dollar
The two most important numbers to study when comparing birds are those which relate to production and livability; these two factors determine 90% of your income dollar. Heisdorf & Nelson has developed a bird with an unsurpassed record for both production and livability. The 1958, 1959 and 1960 Random Sample Test results give evidence of H&N's superiority. In 46 official tests entered, the H&N's produced 18 more eggs per hen housed. They finished the tests with 7.5% mortality –this was far below the tests average. Outstanding production and livability are but two of the benefits you receive from H&N's Balanced Breeding Program; excellence in feed conversion, egg size, shell strength and interior quality are the others. Try H & N's on your own farm and gain the benefit of H&N's superiority.
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A series of experiment station and practical feedlot trials have proved that our enzyme product, Nopgro, when added to cattle feeds brings positive, profitable gains. We are ready to show you how to add it and what results you can expect.

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BASIC FACTS ABOUT A RECENT UNIVERSITY* TRIAL

*Name on request

Number of steers: 24 (6 per lot)

Breed: Black Angus

Length of study: 140 days

Basal Ration: Low-moisture corn and cob meal; good alfalfa hay; plus the following protein and mineral supplement, fed at the rate of 1 lb. per head per day:

	(percent)
50% soybean oil meal	71.0
66% dry molasses product	10.0
Wheat bran	10.0
Dicalcium phosphate	5.0
Ground limestone	2.50
†Diethylstilbestrol premix	1.0
Trace mineral premix	0.25
‡Vitamin A and D_2 premix	0.25

†Supplies 10 mg of diethylstilbestrol daily

‡Supplies 5000 USP units of vitamin A and 1000 of D_2 per pound of supplement

Average protein content of total ration: approx. 10.5%

SUMMARY OF IMPROVED PERFORMANCE DUE TO SUPPLEMENTAL NOPGRO

Lot No.	Level of Nopgro Fed (lb./head/day)	Avg. Daily Gain (lb., 140 days)	Average Feed/Gain Ratio	Increased Response due to Nopgro (%)	
				Gain	Feed/Gain Ratio
I	None	1.90	11.48	—	—
II	.005	2.10	10.69	10.0	6.9
III	.010	2.17	10.68	14.1	7.0
IV	.020	2.04	11.06	7.0	3.6

Note: Although the response due to Nopgro was highly significant, average daily gain and feed conversion in this test were adversely affected by unfavorable weather conditions.

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REMARKS ON RESULTS OF THIS UNIVERSITY EXPERIMENT
—and economic summary

A substantial improvement in average daily gain and efficiency of feed utilization was noted in all three enzyme-supplemented lots as compared with the negative control. Optimum performance was observed at an input rate of .01 lb. of Nopgro per head per day. The dollars-and-cents value of the superior showing made by Lot III is given in the economic summary following.

Economic Summary

The information above reveals an increased profit of $5.04 per head as a result of feeding Nopgro (.01 lb. per head per day). Below are the calculations from which this figure is derived.

(1) Improvement in average daily gain (0.27 lb. per head per day) x number of days on test (140) = 37.8 lb., **increased live weight per animal.**

(2) Increased live weight per animal (37.8 lb.) x arbitrary market value ($25 per cwt)=$9.45, **gross improvement in market value per animal.**

(3) Average daily feed intake for Nopgro cattle (23.21 lb.) less average feed intake for control cattle (21.86 lb.)=1.35 lb. per head per day **extra feed intake for Nopgro-fed animals.**

(4) Increased daily feed intake for Nopgro lot (1.35 lb.) x number of days on test (140)=189 lb., **total increase in feed intake for each animal** receiving supplemental Nopgro.

(5) Total increase in feed intake for Nopgro-fed cattle (189 lb.) x approx. value of composite ration=$4.41, **total extra feed cost per Nopgro-fed animal.**

(6) Gross increase in market value of Nopgro-fed animals ($9.45) less extra feed cost ($4.41) =$5.04, **increased profit per head** due to presence of Nopgro in the ration.

We now have a complete report on the above trial and those of other universities and commercial feedlots. For a round-up of all information on Nopgro, send the coupon.

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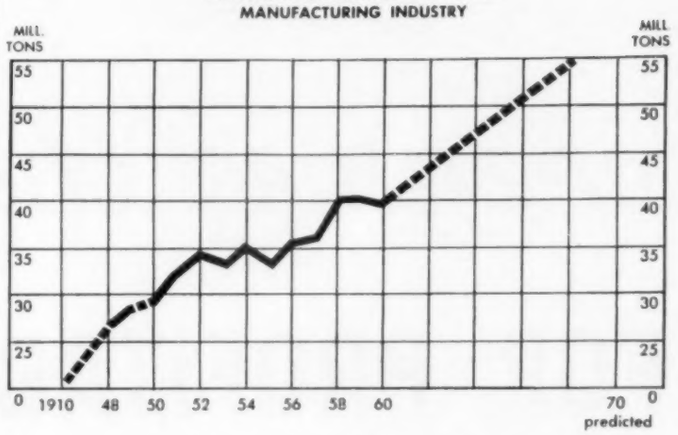

Source: Estimates based on AFMA Tonnage Reporting Service

A MIGHTY INDUSTRY—This chart showing the growth of the feed manufacturing industry is part of the presentation of the American Feed Manufacturers Assn. in its new public relations effort, a booklet entitled "Mightier Than Missiles." That the ability of the U.S. to produce far more agricultural products than it can consume is its mightiest weapon in the current world struggle for power is the point driven home by the booklet. AFMA is urging feed men throughout the nation to tell their fellow citizens about this mighty weapon in which the feed industry plays a role. Copies of the booklet are available from American Feed Manufacturers Assn., 53 West Jackson Blvd., Chicago 4, Ill.

most satisfying, comforting and rewarding phases of animal husbandry."

Mr. Sitton said, "Swine lend themselves very well to a confinement rearing program. A program is an absolute necessity, preferably a researched, proven program. Management of such a program is the hinge to success."

Some breeds of swine perhaps lend themselves better to confinement than others, Mr. Sitton said. The breed is for the producer to determine. Care of the sow prior to breeding and during the gestation period is probably the most important because, with proper management of a planned program at this state, you are insuring yourself of a large, healthy litter at farrowing time, he told those in attendance. Feeding the sow 6-7 lb. of a balanced ration during this stage, eliminates the individual from any wrong practice, or mistake in any malfunction or unforeseeable, undesirable event in the life of the litter of pigs. Improper nutrition during gestation can result in small litters and weak pigs at birth.

Research, Mr. Sitton said, has shown it is desirable to feed the sow a different ration from five days before farrowing to 10 days after farrowing. This ration is bulky, a mild laxative, with salt to cause the sow to drink more water to replenish the excessive liquid loss at birth. This type of feed also inhibits the milk flow for a few days, thus preventing excessive milk production which can cause nutritional scours in real young pigs.

Baby pigs, Mr. Sitton pointed out, are born with enough iron in their systems to last them only three days. Sow's milk is low in iron content, and cannot supply the needs of the suckling pig. Research has shown that it is very important to give an iron shot at 2-3 days of age. The time element is very important. A 2cc. shot of 75 mg. iron at two days is a preventive of anemia, and will carry the baby pigs through until they get enough iron through solid food intake to supply their iron needs.

Mr. Sitton said 10 sq. ft. of floor space per hog of market weight size with feeder space equal to one hole in a self feeder to each four hogs in a pen are recommended.

Probaby 20-30 pigs is the desirable maximum number of feeders or fattening hogs in one pen.

According to Mr. Sitton, the care of the pigs after weaning is another important phase of any good program. Specially prepared feeds of 18% protein will produce 1 lb. of pork for each 1.5%-1.6% of feed consumed. The pounds of gain that are put on the small pig from birth to 100 lb. are the cheapest gains obtainable, he said. The price of the feed is not the limiting factor as to whether you feed these commercial specialty feeds, but the conversion of pounds of gain per pound of feed fed. Ten pounds heavier at nine weeks requires 25 days less to produce a 190 lb. market hog.

Pigs should be wormed two weeks after weaning, and then again four weeks later, Mr. Sitton advised. Liquid wormer mixed with water in a gravity fountain according to directions on the container is probably the handiest to handle. This wormer, piperazine, will remove round worms and nodular worms, and is 90% shock free.

The speaker said use of a grain supplemented to provide 16% protein from 50 lb. until the animal reaches 100 lb., and a grain supplemented to provide a 12% protein ration from 100 lb. to market weight are showing very good results. Feeds providing higher levels of protein are costing more than necessary if the animals do not need it, he said.

Mr. Sitton said that, under the program he described, conversion (the ratio of total feed used to produce total gain of growth), will be 2.8 to 3 lb. Figured from weaning (5-6 weeks) to market it will run 3/10 lb. more per pound of gain.

The proper time to sell, he suggested, is when the animal's ability to convert feed into meat reaches the point of diminishing returns.

Study Shows Coastal Bermuda Can Be Used in Broiler Feed

CLEMSON, S.C.—Research at Clemson College has revealed that, "for all practical purposes, dehydrated alfalfa and Coastal Bermuda grass are interchangeable in broiler feed."

Since Coastal Bermuda grass is more economical for southeastern poultry farmers, researchers wanted to know if this grass could replace alfalfa in broiler type rations as a source of vitamin A and pigment.

Using some 30 one-day-old chicks, the researchers fed various combinations of rations containing alfalfa and Coastal Bermuda. After checking individual weight gains, the birds were sacrificed at four weeks, and an analysis made of both blood and liver vitamin A. Shank pigmentation was also determined.

The preliminary data indicate that Coastal Bermuda is an "excellent" source of both vitamin A and pigmenting agents.

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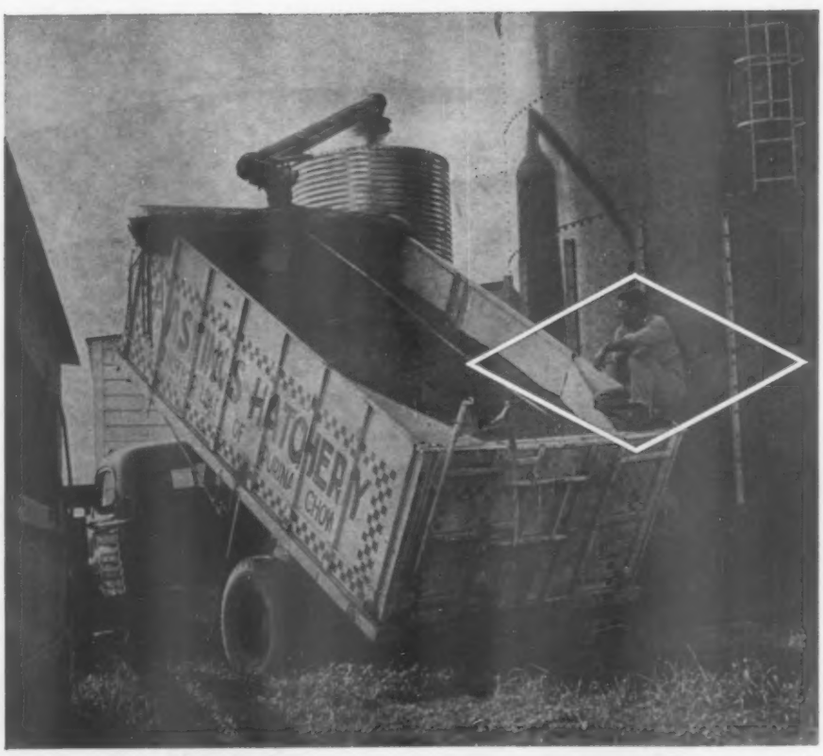

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Bulk feed driver, Thomas McBurney of Hastings Hatchery says "This Dodgen rig is the best I've seen. It's easy to operate in all kinds of weather and works out real well for handling bulk and bags on the same trip."

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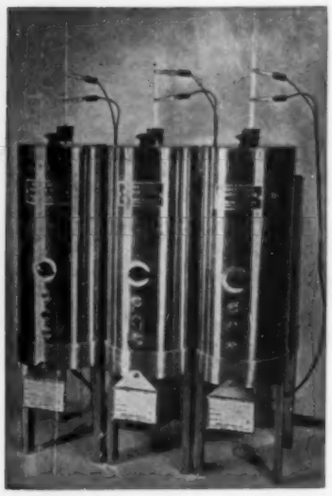

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Now you can own a B.D. moisture tester with automatic shut-off built in the unit—compact and modern. Compare these features:

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- Rheostat control of heat.
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Names in the News

EUGENE BAKER JOINS VINELAND POULTRY—Eugene Baker will head a new distribution center in Springdale, Ark., just opened by Vineland Poultry Laboratories, Vineland, N.J. The branch warehouse will serve Arkansas and adjacent states, including Texas and Louisiana.

Eugene Baker

Mr. Baker, a resident of Springdale, was associated with an equipment firm and a trucking firm prior to joining Vineland.

The new distribution center will stock Vineland's entire line of vaccines and poultry health products for delivery in an eight state area.

CLIFF SIMMONS JOINS CONTINENTAL GRAIN CO.—Cliff Simmons has been named manager of the Spokane, Wash., office of Continental Grain Co., Portland, Ore., it was announced by the company.

Mr. Simmons will succeed Tommy Sullivan, who has been named a member of the firm's trading and merchandising staff. Mr. Simmons had been manager of the Rockford Grain Growers, Rockford, Wash., for the past 11 years. He is current president of the Pacific Northwest Grain Dealers Assn. His appointment is effective Jan. 1, 1962.

MISS DELMARVA PAGEANT DIRECTORS NAMED—W. Joseph Williams, mayor of Seaford, Del., and his wife, Kitty, have been named directors of the Miss Delmarva Beauty Pageant, replacing Earl Hawk, Greenwood, Del., who has retired from the post. Finals of the pageant are held each June as a feature of the annual Delmarva Chicken Festival.

Last June Mayor Williams was general chairman of the 14th annual Delmarva Chicken Festival and National Chicken Cooking Contest, held at Seaford. As pageant directors, Mr. and Mrs. Williams will be responsible for organizing the 20-25 preliminary community contests in which winners are selected to compete for the Miss Delmarva title in the finals at the Chicken Festival in June.

HAYWARD POULTRY PRODUCERS ASSN. ANNOUNCES PERSONNEL CHANGES—Administrative changes within the Hayward Poultry Producers Assn. headquarters at Hayward, Cal., have been announced by Louis J. Hartenfeld, general manager.

R. R. McPherson, Rio Linda, is now in charge of the co-op's feed department. His duties include purchasing, production and transportation for the Hayward group. Mr. McPherson was, for many years, general manager of the Rio Linda Assn., which joined the Hayward co-op last summer.

Ed Borgarine now heads the Rio Linda operation and John Thompson, Hayward; Pat Berry, Morgan Hill, and Gerard Fondse, Ripon, continue as plant managers in their areas. Mr. Hartenfeld said Mr. McPherson will also supervise the association engineer, Bill Schaapman.

Other changes or reappointments include: Robert Caldwell, director, quality control laboratory, responsibility of formulation and nutrition program; Arie den Dulk, Jr., and Oscar Wedegaertner, co-chairmen, association-wide new business and sales program; Loren Byerly, association credit manager and treasurer of credit union; his assistant, Mrs. Doris Morris, and Henry Betz, association treasurer.

WILLIAM F. OSBORNE OPENS FEED INGREDIENTS BROKERAGE—William F. Osborne, former meal sales representative for Spencer Kellogg division of Textron, Inc., has opened a feed ingredient brokerage office in Decatur, Ill.

W. F. Osborne

Mr. Osborne joined the Spencer Kellogg firm at Buffalo, N.Y., in July, 1949, upon graduation from Michigan State University. He was a sales representative for Spencer Kellogg in Buffalo and, more recently, in Decatur, from 1955 until the company ceased operation of its Decatur plant.

E. HOLZER, INC., EXPORTERS, APPOINTS THREE VICE PRESIDENTS—E. Holzer, Inc., Exporters, New York, which handles divisions of several U.S. poultry supplies and equipment, breeding stock, hatching eggs, and farm and dairy supply companies, has announced three appointments.

Joseph Rauchwerger has been promoted to the position of vice president. Mr. Rauchwerger is a graduate electrical engineer with experience in South America and Europe. He is in charge of world-wide shipments of

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NEW-IMPROVED
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100% usable
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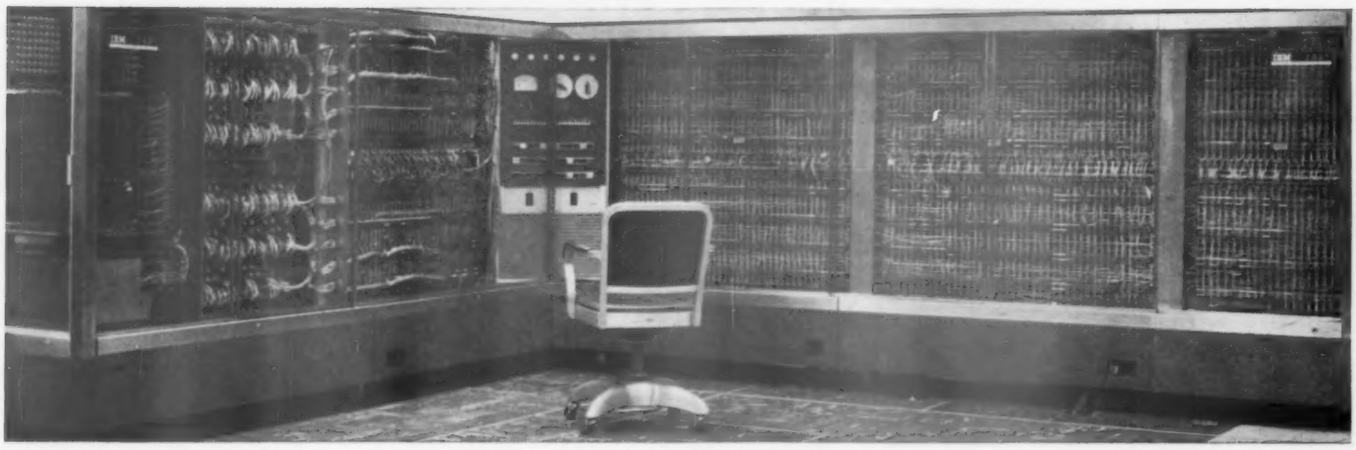

This is a picture of a high-speed electronic computer we use to relieve our research people of some of the drudgery that goes with learning more about how vitamin A works in poultry and livestock.

The machine has already made practical a new statistical method for comparing the relative effectiveness of various forms of vitamin A fed to chicks over a long term.* The computer can "think" about 25 different samples of vitamin A all at once. It "thinks" fast. So answers come fast.

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*A painfully complicated subject; but the curious may examine the results in detail in *Poultry Science 39*, 1230 (September, 1960).

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American poultry equipment and supplies.

Julio Platas has been appointed vice president. Mr. Platas, a graduate of the University of Georgia, formerly worked with Chas. Vantress Farms, Inc., and Arbor Acres Farms, Inc., New Mexico City. Mr. Platas will travel world wide promoting American breeding stock and equipment.

Gerd Levin has been promoted to vice president. Mr. Levin speaks several languages fluently and has lived for several years in South America and Germany.

EDWARD R. BACON GRAIN CO. ANNOUNCES TWO APPOINTMENTS — Edward R. Bacon Grain Co., Portland-Boston, has announced the appointment of Olyn Darling as manager of the Portland office, and George Boyajian as assistant vice president in the Boston office.

Mr. Darling was formerly associated with the Maine Central Railroad and Mr. Boyajian was associated with the grain inspection department of the Boston Grain & Flour Exchange, Inc.

THREE PROMOTED BY MURPHY PRODUCTS CO. — Murphy Products Co., Burlington, Wis., has announced three promotions within its sales management group.

James R. Wilson

S. C. (Sothern) Hammett, Washington, Ind., has been named Murphy divisional sales manager for southern Indiana, replacing Florance Hyde. Mr. Hammett has owned and operated the Hammett Feed Mill, a Murphy retail dealership in Washington, the past 13 years and, at the same time, was responsible for a Murphy sales district in that area. Prior to this he was active in insurance sales.

S. C. Hammett — Robert L. Kling

Robert L. Kling, divisional sales manager, Newton, Iowa, has been moved from his northwest Iowa-southern Minnesota Murphy sales division to a similar post in eastern Iowa, until recently managed by A. B. Green. Mr. Kling farmed until 1955 and was in the heating and air conditioning field until 1959, when he joined Murphy as a district distributor.

Taking over Mr. Kling's former division is James R. Wilson, Storm Lake, Iowa, previously a Murphy district distributor. Mr. Wilson was formerly vice president for sales of Farmcraft Feeds, Inc., Des Moines, and worked as a district sales manager for Moorman Mfg. Co. in the Albia, Iowa, area.

NAME IOWA FEED INDUSTRY REPRESENTATIVE TO ADVISORY COMMITTEE — Fred M. Andresen, manager of sales and nutrition for Northwestern Distributing Co., Mason City, Iowa, has been named on the advisory committee of the Iowa Department of Agriculture as representative of the feed industry.

The committee is set up to guide the thinking of the department and to assist in promulgation of legislation for the next session of the Iowa legislature.

Mr. Andresen, a member of the board of directors of the Western Grain & Feed Assn., has been with the Northwestern Distributing Co. since 1950. He is a native of Minnesota and a graduate of the University of Minnesota.

DR. JONES IN GEORGIA EXTENSION SERVICE POULTRY NUTRITION WORK — Dr. Marion L. Jones is working with the University of Georgia Cooperative Extension Service throughout the state, primarily in the field of poultry nutrition, according to Charles R. O'Kelley, state agricultural leader for the extension service.

Dr. Jones received his B.S. degree in animal husbandry from Clemson College, a master's degree in animal nutrition from Oklahoma State University, and recently received his doctor's degree from Texas A&M in poultry nutrition. At Texas A&M he studied under Dr. J. R. Couch.

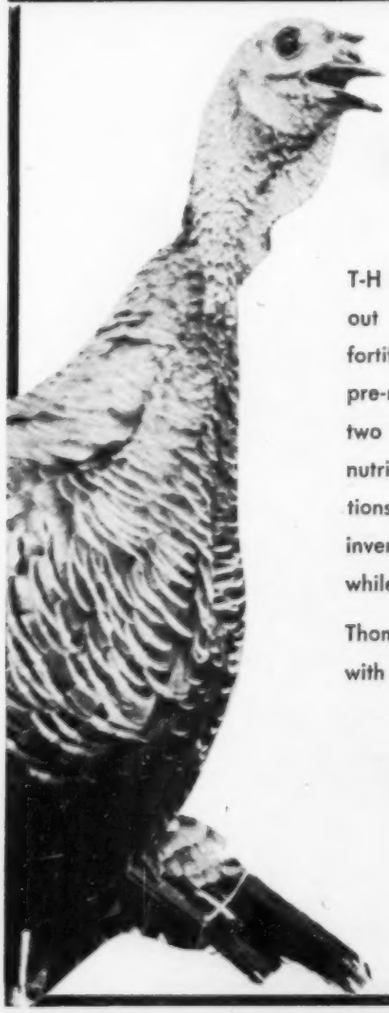
VICTORY SOYA NAMES JOHN C. HENDERSON—John C. Henderson has been appointed vice president and general manager of Victory Soya Mills, Ltd., Toronto, it was announced.

J. C. Henderson

Mr. Henderson, who had been vice president, sales, succeeded E. L. Newman, who retired. Mr. Newman had been vice president and general manager the past seven years.

GENERAL MILLS APPOINTS ASSISTANTS TO PRESIDENT, BOARD CHAIRMAN — Carter M. Dewey, assistant to the chairman of the board of General Mills the past three years, has been appointed assistant to the president. He will assume his new duties Dec. 1 when E. W. Rawlings, newly elected president of the company, takes office.

Richard E. Nutting, who has been



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T-H Turkey Pre-Mixes are the easy, economical way to get the most out of your turkey feeds. Customized formulation eliminates over-fortification or duplication of additives. Simply select a combination of pre-mixes in the T-H feeding program that fits your needs. There are two T-H Pre-Mixes for turkeys that are designed to meet a variety of nutritional requirements. No. 1 is for starter, grower and finisher rations . . . No. 2 is for turkey breeder rations. This complete pre-mix inventory gives you balanced nutrition for every growing stage . . . while eliminating piecemeal ordering and waste.

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assistant to the president the past two years, will become assistant to the chairman of the board when C. H. Bell, president since 1952, assumes that position, also Dec. 1.

Mr. Dewey, a General Mills employee since 1932, has held a variety of assignments with the company. Mr. Nutting joined General Mills' predecessor, Washburn Crosby Co., in 1922, and, when General Mills was formed in 1928, was named assistant chief accountant. Six years later he became chief accountant, a post he held 25 years until he was named assistant to Mr. Bell.

COBB APPOINTS TWO TO STAFF IN SOUTH—Cobb's Pedigreed Chicks, Inc., Concord, Mass., has added two men to its sales and service staff in the South, it was announced by Ted Raymond, Jr., sales manager.

Robert M. Hammond will represent Cobb in the North Carolina area. Mr. Hammond, of Columbia, S.C., has nearly 10 years of experience in breeder and broiler flock service

Charles L. Ezell Robert M. Hammond

work. He formerly represented one of the area's major hatcheries.

Charles L. Ezell has been named Cobb sales and service representative in the Georgia area, with the Gainesville distribution center as his headquarters. He has represented a major agricultural pharmaceutical firm the past six years.

RUDY DENNIS NAMED NAPPANEE GENERAL SALES MANAGER—Rudy Dennis has been named general sales manager of the Nappanee (Ind.) Milling Co., Inc., according to W. Lowell Mullett, president. Mr. Dennis joined Nappanee, which is a manufacturer, jobber and distributor, after serving as director of sales for Automotive Chemical Industry since June, 1960. Previously, he had 23 years of sales, sales management and advertising experience with A. E. Staley Mfg. Co. A native of Decatur, Ill., Mr. Dennis attended the University of Illinois and Millikin University.

Rudy Dennis

Mr. Mullett also announced the recent appointments of three new territory managers—Robert Dawes, Muncie, Ind.; Paul Gagle, Bluffton, Ind., and Robert Grimes, Paw Paw, Mich.

FOUR APPOINTMENTS IN OWENS-ILLINOIS DIVISION—The appointment of four men in the marketing department of the new forest products division of Owens-Illinois Glass Co., Toledo, has been announced by Thomas W. Brown, Jr., division vice president.

James C. O'Neal, Jr., was named general sales manager for multiwall bags and paperboard. He was assistant general sales manager of the former multiwall bag division.

John R. Murphy has been named manager of product planning. He had been general sales manager of the multiwall bag division, now a part of the forest products division.

Peter J. Fluge has been appointed manager of sales promotion and communications, with responsibility for advertising, publicity, internal communications and sales literature. He joined O-I earlier this year.

William H. Morris was appointed manager of market development. He was formerly vice president and manager of board sales for the former O-I mill division.

PACIFIC VEGETABLE OIL CORP. REORGANIZES MARKETING—Pacific Vegetable Oil Corp., San Francisco, has reorganized its marketing, resulting in new appointments. The reorganization is a result of expanding sales of both edible and industrial oils, according to B. T. Rocca, Jr., president.

A newly created oils marketing division will be headed by Richard W. Hammond, formerly manager of PVO's industrial oils department. Warren L. Overlid has been appointed edible oil sales manager in conjunction with the reorganization. Mr. Hammond also announced the promotion of Donald J. Baker from industrial oil sales representative to industrial oil sales manager. In addition, Sam Ross of PVO's Los Angeles office has been named Southwestern regional sales manager, oil sales, and John S. Retkwa of the New York office has been named Eastern regional sales manager for oil sales.

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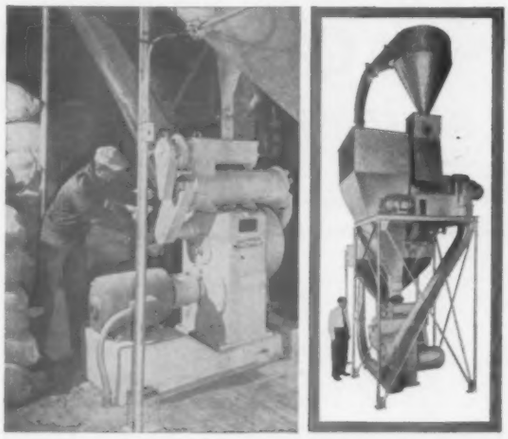

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NUTRITIONIST WANTED — MUST HAVE at least master's degree. Loret Mills, Chattanooga 8, Tenn.

SALESMAN — LEADING FEMALE LINE breeder has opening for experienced man with proven sales ability and good knowledge of poultry industry. Address Ad No. 7458, Feedstuffs, Minneapolis 40, Minn.

CENTRAL STATES FEED MANUFACTURER has opening for assistant sales manager with opportunity for growth with company. Inquiries confidential. Address Ad No. 7414, Feedstuffs, Minneapolis 40, Minn.

WANTED—AGGRESSIVE MANAGER FOR feed and grain elevator in Illinois, doing over ¾ million dollars business yearly. Experienced in buying and marketing grain, feed, plant foods. Address Ad No. 7413, Feedstuffs, Minneapolis 40, Minn.

RETAIL STORE MANAGER — FEEDS, seeds, fertilizers. Capable taking complete charge. Must know custom grinding, formula feeding, mill operation. Excellent opportunity for real producer. Wisconsin location. Send complete information and salary requirements. Address Ad No. 7422, Feedstuffs, Minneapolis 40, Minn.

SALESMEN WANTED — EXPERIENCED salesmen to sell baler and binder twine on a commission basis. Can be sold in addition to your present lines. Prime territories in Illinois, Missouri, Kansas, Nebraska and the Dakotas open. Please give qualifications and references. Address Ad No. 7377, Feedstuffs, Minneapolis 40, Minn.

EXCLUSIVE WHOLESALE DISTRIBUTORship—Poultry and animal poultry health. Progressive manufacturer of highly advertised animal and poultry health products will turn over exclusive Middlewest territories with 150 to 400 retailers. No expense necessary. Company will train applicant in the field and finance initial inventory. If you have called on feed dealers and have ability to learn, here is an opportunity with an unlimited five figure income potential. Send complete information on experience in first letter. All replies strictly confidential. Address Ad No. 7426, Feedstuffs, Minneapolis 40, Minn.

STATE SALES MANAGER—RAPIDLY EXpanding hybrid corn company has real opportunity for experienced merchandiser, age 35-45. Must have a good agricultural background in this or related industry. Report directly to and trained by general sales manager to carry out our complete marketing plan. Will be expected to recruit, train, supervise topnotch district sales managers in direct to farm sales organization. Excellent salary, expense, bonus plan for a real developer. Company has hard hitting advertising promotional program; products unexcelled in our industry. Include complete resumé of your experience in reply to Ad No. 7425, Feedstuffs, Minneapolis 40, Minn.

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Nutritionist for technical service staff. Formulation and research duties. Must be willing to travel. To be located at research farm. Excellent opportunity. Contact

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Nutritional Research Laboratory
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We are seeking salesmen for New England and Middle Atlantic States. This position requires traveling with a car and expenses are provided. We are forming a new sales organization. We are a large and long-established National Manufacturer of feed ingredients. The men we are looking for should have sales experience calling on feed manufacturers. Compensation is salary and expenses. All replies are strictly confidential.

Address Ad No. 7191, Feedstuffs
Minneapolis 40, Minn.

HELP WANTED

WANTED WEST COAST SALES REPREsentative to cover seven western states with nationally known line of supplements sold to feed manufacturers. Base salary, plus commissions, expenses paid, and automobile furnished. Address Ad No. 7431, Feedstuffs, Minneapolis 40, Minn.

WANTED FIELD SALES REPRESENTAtive, preferably based in Pennsylvania, to cover feed manufacturers in 7-state area and subsequently to supervise junior sales representatives in this area. Extensive travel but weekends at home. Salary plus commissions, plus expenses, plus auto, plus benefits. Experienced candidates should reply to: Borden's Feed Supplements Division, 350 Madison Ave., New York 17, N. Y.

SALES REPRESENTATIVE WANTED — Must have feed sales experience and be available to travel western and southwestern Minnesota. Compensation is salary plus commissions. Car furnished and expenses paid. Opportunities unlimited with the fastest growing company in the Midwest area. State qualifications and experience. All replies strictly confidential. Address Ad No. 7417, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

ONE USED ELECTRIC POWERED LIFT truck with capacity of 2,000 lb. Address Ad No. 7429, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—ONE DAFFIN FEED MILL (1957), used little, $9,000. Financing available. Garland Bernhardt, R. 3, Tomah, Wis.

CHAMPION MOBILE GRINDER AND mixer mills. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

FOR SALE — FOUR 100 H.P. HAMMER Mills, Jacobson No. 8 with automatic feeders, magnets, starters and controls. Address Ad No. 7428, Feedstuffs, Minneapolis 40, Minn.

WHIRLAWAY AIRBLAST CAR LOADERS, flour, feed and grain machinery. One of the oldest and largest experienced equipment houses. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

NO. 1200 REBUILT SHELLER, $595; USED Fischbein Bag Closer, $185; rebuilt 2-ton K-D Vertical Mixer, $575; Bryant Cracker and Grader, $450. Address Ad No. 7430, Feedstuffs, Minneapolis 40, Minn.

MOBILE MILLS, NEW, USED AND FACtory rebuilts. Complete with grinder, mixer, diesel, molasses. Financing available. Iowa Portable Mill Co., Oelwein, Iowa.

ONE 1½-TON BROWER ABOVE FLOOR dump mixer, with 5 H.P., 3 ph. motor. One 50 H.P. Prater Blue Streak mill with base, 50 H.P. motor and 50 H.P. reduced voltage starter. Address Ad No. 7424, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—WHIZZER BAGGING CONveyors, Richardson scales, Union Special, Minneapolis, Fischbein sewing heads, one to seven ton square bins, welded spouting and elbows. Winborns Mill Equipment Service, Williamsburg, Iowa.

SEWING MACHINES—ALL TYPES CONveyors, swinging units, portables. New and used. Fischbein, Union Special, Minneapolis. Complete rebuilding and service. McCullough & Co., 8205 Paradise Lane, Kansas City 34, Mo.; SOuth 1-2857.

Used Moisture Testers

Model S Steinlite Moisture Testers, completely reconditioned price, $75 each. Write or phone collect:

BURROWS EQUIPMENT CO.
1316-C Sherman Ave. Evanston, Illinois

LIQUIDATION
OMAHA, NEBRASKA

2—145 cu. ft. horiz. ribbon mixers.
1—Huntley Monitor grain sep. & cleaner.
1—Louisville 5'x30' steam-tube dryer.
7—Allis-Chalmers Degerminators.
2—Allis-Chalmers inter-plane grinders.
6—Horiz. grain germ reels.
1—Prater No. 20 Blue Streak hammermill.
2—Forster No. 6 hammermills, 75 h.p.
5—Davenport dewatering presses.
2—Louisville 4' 6"x25' steam-tube dryers.
2—Buflovak 42"x120" drum dryers.

Send for Detailed Circular
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1403 N. 6th St. Philadelphia 22, Pa.
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MACHINERY FOR SALE

FOR SALE—EUREKA GRAIN CLEANER (No. 8). Like new. Priced to sell. Call or write: Bauer Feed & Grain, Inc., Campbellsport, Wis.; Phone: LEnox 3-4334.

1957 DAFFIN FEED MOBILE WITH GMC diesel mounted on 1957 Chevrolet standard truck. Actual mileage 36,000. Diesel has 3,218. Air unloading. Very fine mechanical condition. Price $10,500. Address Ad No. 7436, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—ENCLOSED MOTORS; RICHardson scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

CALIFORNIA PELLET MILLS FOR SALE: One unused California pellet mill, model 200C, with a single reduction drive to provide 265 r.p.m. die speed if driven with a 125 h.p., 1,800 r.p.m. drive motor. Unit is on a base, with Falk coupling, special Epoxy coated pellet chamber, stainless steel liner on gear box, stainless steel knife posts, stainless steel California Whirley feeder, and chrome plated stationary cone. No motor. Price, f.o.b. our yard Los Angeles, Cal., $8,250. Two California pellet mills, as described above, except that they are used, and are each equipped with a 125 h.p., G.E. 1,770 r.p.m., 2,300 volt, 3-phase, 60-cycle, frame 1843 motor. Price, f.o.b. our yard, Los Angeles, Cal., $9,000 each. The above equipment was purchased new in 1960. O'Brien Machinery, Inc., 2424 E. Washington Blvd., Los Angeles 21, Cal.

BUSINESS OPPORTUNITIES

FOR SALE—ONE ALFALFA DEHYDRATing plant, complete. Located in west central Ohio. Good field machinery and trucks. One Heil dryer and feeder. 1,500 ton storage capacity. Contact Charles Nelson, West Liberty, Ohio.

SITUATIONS WANTED

PRODUCTION MANAGER AVAILABLE — Graduate engineer with 15 years' experience in engineering, maintenance, feed plant management and direction of multi-plant operations. Commendable results in low cost efficiency improvements of older mills. Age 38. Desire challenging position as manager of large feed mill, operating responsibility for multi-plant operations or sales assignment with well regarded milling and material handling machinery organization. Please Address Ad No. 7398, Feedstuffs, Minneapolis 40, Minn.

MACHINERY WANTED

WANTED—HEIL SD 8x24 DEHYDRATOR. Complete plus delivery. McIntosh Farms, Lac du Bonnet, Manitoba, Canada.

WANTED — SCREW CONVEYOR, STEEL boxes, covers, beamings and hangers, etc. Selma Soybean Corp., Selma, N. C.

BAG CLOSING SEWING MACHINES AND equipment. Any type—condition. McCullough & Co., 8205 Paradise Lane, Kansas City 34, Mo.; SOuth 1-2857.

WANTED TO BUY—50 TO 100 H.P. USED California and Sprout-Waldron pellet mills. Address Ad No. 7352, Feedstuffs, Minneapolis 40, Minn.

WANTED—LATE MODEL MOBILE FEED mill. Write or phone full particulars. Goodhart & Son, Humboldt, Neb.; Phone 2461; Dale Goodhart 7331.

WANTED TO BUY — RICHARDSON scales, bag closing machines, other good flour, feed and grain machinery. Complete plants bought and sold. Appraisals. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

MISCELLANEOUS

FOR SALE — TWO BUTLER STORAGE silos 32 ft. high by 14 ft. 8 in. diameter; steel leg with motor. Located Mineral Point, Wis. Contact Daniel J. McKernan, Iowa County Co-op Warehouse, Dodgeville, Wis.

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TEST KIT

Book your order now for immediate shipment or delivery next year on the Zeleny Sedimentation Test Kit. Burrows offers the lowest priced kit on the market, complete with all necessary accessories to comply with U.S.D.A. regulations. For details and FREE U.S.D.A. bulletin giving complete information, write

BURROWS EQUIPMENT COMPANY
1316-C Sherman Ave., Evanston, Illinois

Retail Feed Problems Short Course Topic

LINCOLN, NEB.—A program to discuss problems of retail feed dealers and salesmen as well as to keep them informed on recent developments in livestock feeding and management is planned for the Nebraska Feed Industry Short Course Nov. 29-30 at the Center for Continuing Education of the University of Nebraska, Lincoln.

The morning session Nov. 29 will be entitled "What's in a Feed Bag?" and will include the following presentations, all by University of Nebraska faculty members: "What We Analyze For," Dr. Raymond L. Borchers, department of biochemistry and nutrition; "Proteins," Dr. W. J. Owings, department of poultry husbandry; "Carbohydrates and Fats," Dr. Foster G. Owen, department of dairy husbandry; "Minerals," Dr. Thomas W. Sullivan, department of poultry husbandry; "Vitamins," Dr. Ernest R. Peo, Jr., department of animal husbandry, and "Additives," Dr. Donald B. Hudman, department of animal husbandry, University of Nebraska.

On the afternoon program will be Dr. Alfred O. Gigstad, Nebraska City, Neb., veterinarian, who will speak on "The Local Veterinarian's Relationship to the Feed Dealer"; Eldon Roddis, Roddis Grain Co., Rochester, Minn., "The Economics of On-the-Farm Mixing," and George A. Young, DVM, department of veterinary science, Univ. of Nebraska, and Dr. Feo, "Feeding and Management of SPF Pigs." Wrapping up the afternoon will be a tour of displays. That evening William Schafenacker of Kent Feeds, Muscatine, Iowa, will speak on "Nutrients of a Feed Business."

The first session Nov. 30 will feature a speech by Robert Cole, business organization and management, University of Nebraska, "Today's Problems of Credits and Collections for the Feed Dealer." A workshop on feed dealer accounting will be conducted by John W. Goebel, business organization and management, University of Nebraska.

In the afternoon there will be group discussion on "How to Handle Dealer Accounts," led by Harold Fouts; "Credit and Collection for the Small Dealer," Don Huck, Ace Fuel & Grain, Norfolk, Neb., and "Questions on Nutrition," Dr. Sullivan.

Group discussions will be followed by a speech by Dr. W. M. Beeson, department of animal husbandry, Purdue University, Lafayette, Ind., "Urea in the Feeding of Livestock."

Sponsoring the conference are the University of Nebraska, college of agriculture, the Nebraska Grain and Feed Dealers Assn., and the Midwest Feed Manufacturers Assn.

Speeches Abroad Set

COLLEGE PARK, MD.—Dr. Gerald Combs, University of Maryland poultry department, will address the middle eastern regional meeting of the World Poultry Science Assn. in Jerusalem Nov. 20.

Dr. Combs will discuss recent developments in nutritional research at the University of Maryland.

The trip, sponsored by the Foreign Agricultural Service through the Soybean Council of America, will also take Dr. Combs to Paris, France, where he will address a meeting of European poultry scientists.

He also plans to stop in Rome for consultation with the Food and Agriculture Organization of the United Nations.

ELEVATOR FALLS, 6 TRAPPED

INDIANOLA, MISS. — Six workmen were trapped recently when a grain elevator collapsed at the Delta Brokerage Warehouse Co. here. The elevator, one of 15, was under construction. Five men were rescued immediately. A steel girder had to be cut to free the other man.

PROVISIONS

(Continued from page 10)

are free quantity turkeys may be disposed of by him in any marketing outlet, subject, however, to any grade, size or quality restrictions otherwise provided by this part.

§ T-54 Set-aside surplus turkeys — (a) All turkeys set aside to meet the handler's surplus set-aside obligation shall be free and clear of all liens and shall be held by the handler for the account of the committee in compliance with regulations of the committee, approved by the Secretary, until the handler has been relieved of such responsibility by the committee, either by delivery to, or at the direction of, the committee, or otherwise, Provided, that any liens outstanding on set-aside surplus turkeys at the time of handling shall, when the turkeys are set aside, be subject in every way to this order and the regulations thereunder, and any lienholder with respect to such lien shall, to the extent of such lien, be deemed an assignee of a pro rata interest in the net proceeds of the applicable pool of set-aside surplus turkeys.

(b) If so directed by the committee, the handler shall hold such turkeys in storage, in such facilities and under such storage conditions as the committee may prescribe and in such manner as to maintain the stored turkeys in good merchantable condition.

(c) Set aside turkeys shall be held or stored and containers shall be labeled or otherwise marked in such manner as the committee may prescribe so as to be identifiable at all times and shall be subject to inspection by the committee or its representatives at all times.

(d) Upon 5 days' notice, a handler shall commence delivery to the committee or its designee of any or all set aside turkeys held for the account of the committee and at such rate as may be prescribed.

(e) Handlers shall use good commercial practices in caring for set-aside items and be liable to the committee for losses of set-aside resulting from lack of due care.

§ T-55 Set aside by grade, size or type—Upon recommendation by the committee and approval by the Secretary, the quantities to be set aside by handlers may be segregated by grade, size or type and separate pools may be established for the disposition thereof and the distribution of proceeds.

§ T-56 Title—The committee, with respect to turkeys set aside as surplus for the account of the committee, shall be deemed to have title thereto as trustees, and is authorized to negotiate loans on such set-aside surplus turkeys for the purpose of paying the cost of processing, storing and other costs relating thereto, or for making advance payments to producers, or both, with respect thereto.

§ T-57 Pooling period—Any pool of set-aside surplus turkeys shall consist of all surplus turkeys as are set aside by all handlers for any period or periods as the Secretary may prescribe for pooling, but such period shall be not less than one month, nor more than one year in duration. Provided, that the pooling period may include one or more set-aside periods.

§ T-58 Handler compensation — Each handler shall be compensated for processing, storing and such other costs relating to the surplus percentage set aside of turkeys as the committee may deem to be appropriate, in accordance with charges established by the committee with the approval of the Secretary. Such costs shall be borne initially by the handlers but such handlers shall be compensated from each pool for the cost thereof as soon as funds become available from such pool, Provided, that such charges as may be established by the committee, with the approval of the Secretary, may be deducted from any moneys owed by handlers to producers, or their successors in interest.

§ T-59 Distribution of net proceeds—The net proceeds from the disposition of any pool of set-aside surplus turkeys shall be distributed, after deduction of any expenses incurred by the committee for the receiving, handling, holding or disposition thereof, to handlers pro rata on the basis of the quantities of their respective contributions to the set aside contained in such pool, for distribution by such handlers to the respective producers of such turkeys, or their successors in interest, in accordance with records of each handler showing their respective contributions to the handler's total set aside.

§ T-60 Equity holders—So that the handler may determine each producer's or his successor's or assignee's interest or equity in the handler's total set aside, each handler who sets aside turkeys to meet his surplus percentage shall determine, or cause to be determined, the type, grade, and quantity of turkeys so set aside which were received from each producer thereof, together with the name and address of such producer, or his successor in interest, the place of production, and any other information which the committee may require to identify all producers of the turkeys so set aside. The handler shall keep a record of all such information pertinent to each pool of set-aside surplus turkeys to which it may be pertinent.

DISPOSITION

§ T-61 Prohibition — Except as provided herein set-aside surplus turkeys shall not be used or disposed of by any handler.

§ T-62 Disposition of surplus by committee—

(a) **General.** The committee shall have the power and authority to sell and dispose of any and all set-aside surplus turkeys upon the best terms and at the highest prices attainable consistent with the provisions and objectives of this part, but only in the outlets specified in paragraph (b) of this section.

(b) **Outlets.** The committee may sell or dispose of set-aside surplus turkeys in the following outlets:

(1) By sale for disposition in export;

(2) By direct sale to any agency of the U.S. government for noncompetitive uses;

(3) In other outlets which the Secretary, upon recommendation of the committee, may specify by regulation to be substantially noncompetitive with those for normal outlets for turkeys, or

(4) To the extent feasible and consistent with the purposes of this part, the committee may sell or dispose of set-aside surplus turkeys in any other outlets, including any normal outlets for turkeys, but only with the approval of the Secretary.

INSPECTION AND CERTIFICATION FOR GRADE OR QUALITY

§ T-63 Inspection and certification for grade or quality—Whenever, for any period or periods regulations are in effect which require the determination of grade or quality of turkeys, the Secretary, upon recommendation of the committee, may, by regulation, require each handler to cause such turkeys to be inspected for grade or quality by any agency or agencies which he may designate, and further require that any such agency certify the grade or quality of such turkeys on forms of certificates to be prescribed by the committee with the approval of the Secretary. The cost of any such services shall be borne by the handler and not by the committee.

RESEARCH AND DEVELOPMENT

§ T-64 Research and development — The committee, with the approval of the Secretary, may establish or provide for the establishment of marketing research and development projects designed to assist, improve, or promote the marketing, and distribution of turkeys. The expenses of such projects shall be paid from funds collected pursuant to § 39.

(EDITOR'S NOTE: Section 39, reviewed in the Nov. 4 issue of Feedstuffs, states:

("Each handler shall pay to the committee, upon demand, with respect to turkeys handled by him, his pro rata share of all expenses which the Secretary finds are reasonable and likely to be incurred by the committee during each allotment period. Each handler's pro rata share shall be the rate of assessment per hundred pounds of turkey (ready-to-cook) fixed by the Secretary, but such assessments shall not in any event exceed 20¢ per cwt. of turkey (ready-to-cook).

("At any time during or after the fiscal year the Secretary may increase the rate of assessment to cover unanticipated expenses or a deficit in the anticipated quantity of turkeys handled.

("In order to provide funds to carry out the functions of the board and committee, the committee may accept advance payments from any handler and such shall be credited towards assessments levied pursuant to this section against such handler.

("The payment of expenses for the maintenance and functioning of the board and committee may be required throughout the period during which this part is in effect and irrespective of whether particular provisions thereof are suspended or become inoperative, or whether volume regulation is in effect in the allotment period.")

UNFAIR TRADE PRACTICES

§ T-65 Authorization for prohibition of unfair trade practices—Whenever the Secretary finds, upon recommendation of the committee or other information, that continuance of certain unfair practices in trade channels would tend to interfere with the achieving of the objectives of this part, he may prohibit handlers from using such practices, for any period or periods.

Prior to any such practices being prohibited in any period, the committee shall recommend, for the approval of the Secretary, such rules and procedures and such record keeping requirements as are necessary to administer these prohibitions and obtain compliance therewith.

REPORTS AND RECORDS

§ T-70 Reports—

(a) **Regular monthly reports.** On or before the fifth day of each month, each handler shall report on forms prescribed by the committee, his handlings of turkeys for the preceding month, providing such information with respect thereto as the committee may prescribe.

(b) **Other reports.** Upon the request of the committee, with the approval of the Secretary, each handler shall furnish to the committee such other information as may be necessary to enable it to exercise its powers and perform its duties under this part.

§T-71 Records—Each handler shall maintain such records pertaining to all turkeys handled as will substantiate the required reports and such others as may be prescribed by the committee. All such records shall be maintained for not less than five years after the termination of the allotment period to which such records relate or for such lesser period as the committee may direct.

§ T-72 Verification of reports and records—For the purpose of assuring compliance with record keeping requirements and verifying reports filed by handlers, the Secretary and the committee, through its duly authorized employees, shall have access to any premises where applicable records are maintained, where turkeys are handled, and, at any time during reasonable business hours, shall be permitted to inspect such handler premises, and any and all records of such handlers with respect to matters within the purview of this part.

§ T-73 Confidential information—All reports and records furnished or submitted by handlers to, or obtained by, the employees of the committee which contain data or information constituting a trade secret or disclosing the trade position, financial condition, or business operations of the particular handler from whom received, shall be treated as confidential and the reports and all information obtained from records shall at all times be kept in the custody and under the control of one or more employees of the committee, who shall disclose such information to no person other than the Secretary.

MISCELLANEOUS PROVISIONS

§ T-75 Rights of the Secretary—The members of the committee and board (including successors or alternates) and any agent or employee appointed or employed by the committee, shall be subject to removal or suspension by the Secretary, in his discretion, at any time. Each and every decision, determination, or other act of the committee shall be subject to the continuing right of the Secretary to disapprove of the same at any time, and upon such disapproval, shall be deemed null and void.

§ T-76 Personal liability—No member or alternate member of the committee or board, nor any employee, representative or agent of the committee shall be held personally responsible, either individually, or jointly with others, in any way whatsoever, to any person, for errors in judgment, mistakes, or other acts, either of commission or omission, as such member, alternate member, employee, representative, or agent, except for acts of dishonesty.

§ T-77 Separability—If any provision of this subpart is declared invalid, or the applicability thereof to any person, circumstance, or thing is held invalid, the validity of the remainder of this subpart or the applicability thereof to any other person, circumstance, or thing shall not be affected thereby.

§ T-78 Derogation — Nothing contained in this subpart is, or shall be construed to be, in derogation or in modification of the rights of the Secretary or of the U.S. to exercise any powers granted by the act or otherwise, or, in accordance with such powers, to act in the premises whenever such action is deemed advisable.

§ T-79 Duration of immunities—The benefits, privileges and immunities conferred upon any person by virtue of this subpart, shall cease upon the termination of this subpart, except with respect to acts done under and during the existence of this subpart.

§ T-80 Agents—The Secretary may, by a designation in writing, name any person, including any officer or employee of the U.S. government, or name any service, division or branch in the U.S. Department of Agriculture, to act as his agent or representative in connection with any of the provisions of this subpart.

§ T-81 Effective time—The provisions of this subpart, as well as any amendments to this subpart, shall become effective at such time as the Secretary may declare, and shall continue in force until terminated or suspended in one of the ways specified in § 82.

§ T-82 Termination or suspension—

(a) **Failure to effectuate policy of act.** The Secretary shall terminate or suspend the operation of any or all of the provisions of this subpart, whenever he finds that such provisions obstruct or do not tend to effectuate the declared policy of the act.

(b) **Referendum.** The Secretary shall terminate the provisions of this subpart on or before the ..... day of ..... of any ..... year whenever he is required to do so by the provisions of Section 8c(16)(B) of the act. The Secretary may, at any time he deems it desirable, hold a referendum of producers to determine whether they favor termination of this subpart. If the Secretary receives a recommendation, adopted by the board, requesting the holding of such a referendum he shall hold such referendum. The results of any such referendum shall be announced by the Secretary by ..... of the ..... year in which held.

(c) **Termination of act.** The provisions of this subpart shall terminate, in any event, upon the termination of the act.

§ T-83 Procedure upon termination — Upon the termination of this subpart, the members of the committee then functioning shall continue as joint trustees, for the purpose of liquidating the affairs of the committee. Action by such trustees shall require the concurrence of a majority of said trustees. Such trustees shall continue in such capacity until discharged by the Secretary, and shall account for all receipts and disbursements and deliver all property on hand, together with all books and records of the committee and the joint trustees, to such person as the Secretary may direct; and shall, upon the request of the Secretary, execute such assignments or other instruments necessary or appropriate to vest in such person full title and right to all the funds, properties, and claims vested in the committee or the joint trustees, pursuant to this subpart. Any person to whom funds, property, or claims have been transferred or delivered by the committee or the joint trustees, pursuant to this section, shall be subject to the same obligations imposed upon the members of said committee and upon said joint trustees.

§ T-84 Effect of termination or amendment—Unless otherwise expressly provided by the Secretary, the termination of this subpart or of any regulation issued pursuant to this subpart, or the issuance of any amendment to either thereof, shall not (a) affect or waive any right, duty, obligation, or liability which shall have arisen or which may thereafter arise in connection with any provisions of this subpart or any regulation issued under this subpart, or (b) release any set-aside held for the account of the committee nor permit its disposition contrary to the provisions of this subpart, or (c) release or extinguish any violation of this subpart or any regulation issued under this subpart, or (d) affect or impair any rights or remedies of the Secretary, or of any other person, with respect to such violation.

§ T-85 Amendments — Amendments to this subpart may be proposed, from time to time, by any person or by the committee.

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1—J&M Pellomatic
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1—3W Jay Bee
1—No. 15 Prater
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1—24" Dixie
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2—Strong-Scott regulators
1—Meter
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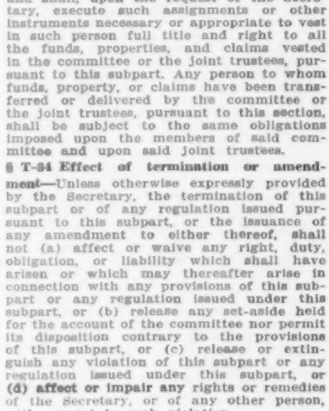
BUY OF THE WEEK



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TWIN-SPIRAL TWO SPEED MIXERS
7 SIZES: ½ TON to 5 TON
All oversize to handle full loads of even the lightest feeds.
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A complete stock of parts is on hand at all times. Rolls are recorrugated as soon as they arrive. Roskamp salesmen are qualified to make adjustments and repairs and are anxious to help you keep your roller mill operating at full capacity.

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ROSKAMP
HULLER MFG. CO.
634 Grand Boulevard, Cedar Falls, Iowa

UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Hog Supplies and Prices

Hog prices have been following a steady pattern so far during 1961, staying mostly within a range of $2 cwt. In 1960, there was a range of about $6 from low to high during the year.

Reduction in the size of pig crops in 1960 gave prices an upward boost late in that year. Although the 1961 spring pig crop was up 7% from the spring crop a year earlier, it was the third smallest crop since the end of World War II. As a result, the extra supplies have been absorbed by the market without leading to price difficulty.

Comparison

You can see in Exhibit 1 how the number of sows farrowing 1961 spring and fall crops compare with those of the last two years. The 10-year average from 1949-58 also is shown in this chart. It is interesting to note that fall farrowings the last three years have exceeded the size of the 10-year average. Spring farrowings have been fewer.

Increases in 1961 were modest considering the hog-corn price ratio. Over a long period of years the price received for 100 lb. of hogs has averaged the price of about 12 bu. of corn. Since mid-1960 this ratio has ranged from 15 to 17. A ratio of this size generally encourages increased farrowings.

Fall surveys by the U.S. Department of Agriculture indicate the 1962 spring pig crop may increase only 3-4%. This would represent only a modest increase considering the favorable hog-corn ratio.

Under Pressure

Hog prices will be under downward pressure for a month or so this winter as slaughter increases. Prices from $14.50 to $15.50 are expected by Kansas State University economists who watch livestock prices closely. But a recovery to the $18 level by mid-summer is probable.

To show a part of the basis for expecting a spring price advance we have compared the percentage of times prices have gone up, stayed the same or gone down from November to January to March and to May. These are pictured for you in Exhibit 2.

Here is how to read Exhibit 2: The top part of the bar indicates the per cent of times the average U.S. farm price of hogs went up from November to January since 1947. Within this bar is "55%." This means that 55% of the years from 1947, hog prices advanced from mid-November to mid-January.

The bottom part of the bar shows the percentage of times that prices went down from November to January. As you can see, it was 45%. Changes from November to the other months in Exhibit 2 are read in the same manner.

You will notice that hog prices have gone up from November to January about half of the years since 1947. Prices have advanced from November to March about three out of five years and from November to May about three out of four years.

Pillsbury Advertising Promotes Broilers

MINNEAPOLIS — The Nov. 19 issue of This Week Magazine and five other independent Sunday supplements will carry a full color two page ad promoting the use of Pillsbury's Mashed Potato Flakes as a breading material for fried chicken. Publicity developed around the same theme will be mailed to newspaper food editors and television demonstrators as part of the promotional program.

This new product use was developed by the Pillsbury Co. to assist in stimulating the movement of broiler chickens to the consumer. Pillsbury executives state that they are planning to be alert to all future opportunities for tie-in promotions of this type.

EXHIBIT 2. Changes in U.S. Farm Price for Hogs, 1947-58

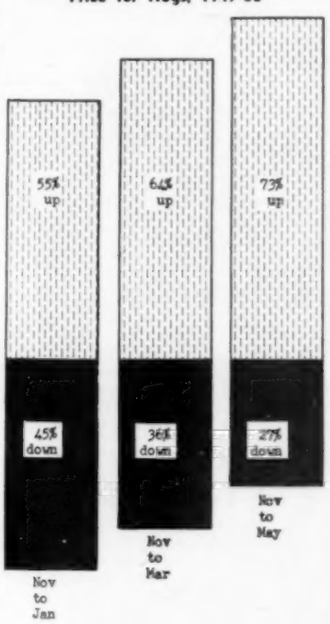
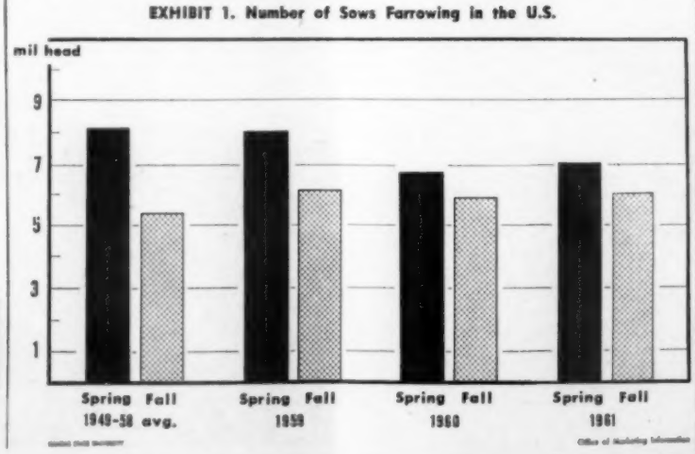


EXHIBIT 1. Number of Sows Farrowing in the U.S.



Feed Tonnage Told By Southern States

RICHMOND, VA. — Southern States Cooperative feed mills produced 653,997 tons of feed during the year ended June 30, down 33,000 tons from the previous year.

Those feed division figures were reported at the organization's 38th annual stockholders' meeting held Oct. 26-27.

W. T. Steele, Jr., general manager of the cooperative, told some 1,800 persons at the meeting that total volume for the fiscal year ended June 30 was $208 million, up $5 million from a year earlier. It was reported that net worth of the organization increased nearly $2 million.

Mr. Steele pointed out that construction work continued during the year on a new feed mill at Baltimore to replace an existing facility.

Mr. Steele said that there "were slight declines in volume of feed, seed, fertilizer and farm supplies, but there were also sharp increases in petroleum volume and grain marketing volume and some less spectacular gains in egg marketing, poultry marketing and in the volume of local farm supply and petroleum cooperatives. Net savings were slightly better than in the previous year and enabled the payment of a .6 of 1% patronage refund. On grain marketing, there was a patronage refound of 1⅛¢ per bushel paid."

J. H. Buchholz, director of wholesale services, told the organization's convention delegates, employees and guests that wholesale volume for the year was $131,352,000, down 2% from the previous year. He pointed out that marketing operations in eggs and grains were up substantially in volume—about $5 million, or more than 30%.

In regard to poultry activities, delegates heard Mr. Steele state that "a depressed poultry market, which existed through much of last year, sank to a new all-time low level near the end of the fiscal year bringing heavy losses to the cooperative and poultry growers in the area.

"By last spring, the heavy tide of over-production was making itself felt. Prices plunged to all-time low markets over the country. The bottom seemed to be reached on last May 26 but hopes for an upward trend were shattered soon after—and two additional lows followed in the next few weeks. As a result, Southern States, after close study, decided to revise its contracting program."

Mr. Steele said that Southern States would "continue to keep its contracting programs flexible, constantly studying ways to improve grower efficiency and lower production costs and keep an open mind as to future steps to take in this direction."

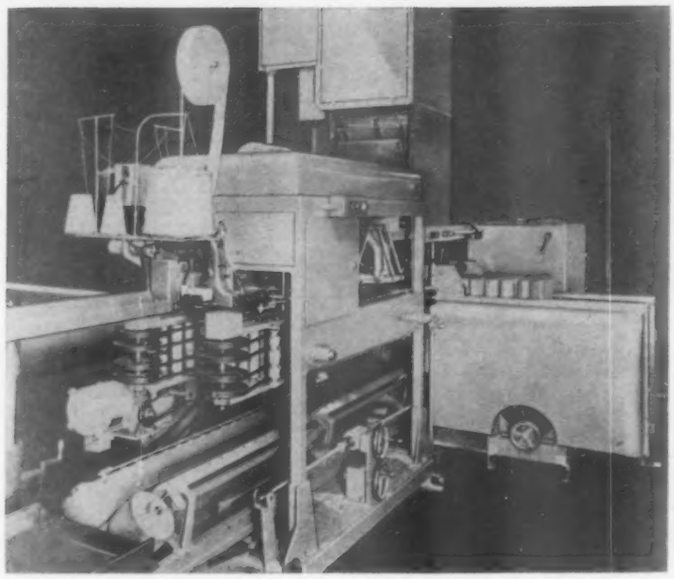
Rapids Machinery Expands Facilities

MARION, IOWA—Rapids Machinery Co., Marion, manufacturer of Marion horizontal mixing equipment, has completed an addition giving it more manufacturing and warehouse facilities.

A 40 x 60 ft. steel and concrete structure has been added to the present plant in Marion. The building has a crane for loading and unloading, added ceiling height for fabrication of special items such as surge bins, weigh hopper scales, special mixing units and off-street facilities for loading and unloading within the plant area.

MAN SUFFOCATES

MOSCOW, IDAHO — John Entel, 35, Argentina, suffocated here when he slipped into the unloading chute of a grain elevator and was covered by barley. The accident occurred on the farm of Richard Paluthe, Mr. Entel's uncle, about 12 miles south of Moscow.



Bemis' New Automatic Bagging System

Bemis Bag Shows New Automatic Bagging System

DETROIT—Bemis Bro. Bag Co., St. Louis, unveiled its new automatic system of filling and closing multiwall bags at the Packaging Machinery Manufacturers Institute Show here this week. Now in production, first commercial installations are expected before the end of the year.

Completely automatic, it combines the Bemis filler-scale, bag feeder and conveyor with a newly-devised closing machine. Capacity is said to be up to 20 bags (2,000 lb.) of most applicable products per minute. Capacity of current systems is 12-16 bags per minute, with higher speeds achieved under certain conditions, officials noted.

The system can be used for any free-flowing product using open-mouth paper multiwall bags, such as feed and fertilizer, and handles bags of various sizes, gusset or flat-tubed, with or without closing tape, according to the Bemis Packaging Service, the packaging machinery division which turned out the system. It requires no operator, merely a part-time attendant to periodically refill the automatic bag feeder, which has a 400 bag capacity. The feeder can be re-supplied while the system continues to operate.

Key component, Bemis said, is the new automatic closing unit. The closing machine receives the filled bag on the conveyor, forms the gussets, levels the top, and feeds it into the sewing machine for final closing. Bemis says it will perform the work of one or two operators in current manual systems, depending on the size of the packaging operation. The leveling mechanism is designed to assure completely even sewing and, thus, eliminate the need for wasting substantial amounts of bag material in trimming from the top.

Company officials emphasized the flexibility of the closing unit. While it is designed primarily for use with a Bemis filler-scale and the Bemis Auto-Mac bag feeder, they said, it can be used with any scale. It also can be obtained separately and used with many systems or units already in operation, they pointed out.

The automatic closing unit has maximum height of 75 in., depth of 44 in., and the main structure is 90 in. in length. This does not include the conveyor, which varies with application.

FDA REGULATIONS

CHICAGO — The Food and Drug Administration's stand on the question of interstate vs. intrastate commerce in connection with food and feed regulations seems to have been substantiated, according to an American Feed Manufacturers Assn. bulletin.

The AFMA cited a report that the U.S. Supreme Court has refused to review a "cooking oil case" in New York. In this case, FDA contended that an article was interstate in nature if any of its components had crossed state lines, even though the final article itself might be distributed only within a state where made. FDA lost in a lower court, but its position was upheld in a higher court, AFMA noted.

"The Supreme Court refusal would seem to substantiate FDA's stand and may indicate future activity in new areas by this agency," said AFMA.

Alberta Feed Group To Hold Conference

EDMONTON, ALBERTA—The Alberta division of the Canadian Feed Manufacturers National Assn. has just announced plans for the first Feed Service Conference to be held Nov. 23 and 24 at the University of Alberta here.

Sponsoring the conference along with the Alberta feed group will be the Veterinary Services Branch of the Alberta Department of Agriculture and the University of Alberta.

Slated to be held the evening of Nov. 23 in conjunction with the conference is the Alberta division's sixth annual University Night. This event will honor the winner of the group's scholarship, members of the agriculture faculty at the university and senior undergraduates in agriculture at the university.

Among the topics and speakers on the program of the conference are: "Basic Nutrition—Role of the Vitamins," Dr. J. M. Asplund; "Current Developments in Medicated Feeds," Dr. Ivan Sparling, Brampton, Ontario; "Legal Implications of Medicated Feeds," K. H. Cunningham, Vancouver, B.C.; "Report of the Poultry Disease Situation in Alberta," Dr. H. C. Carlson, and "Relationships Between the Veterinarian and the Feed Manufacturer," K. H. Cunningham.

Reservations for the events are to be made with A. G. Kirstine, secretary-treasurer, Alberta Division, Canadian Feed Manufacturers National Association, P.O. Box 4189, South Edmonton, Alberta.

Christmas Party Set

MEMPHIS—The Memphis Feed & Grain Club Christmas party will be Friday, Dec. 22, in the Chickasaw Country Club main dining room. There will be a dinner and dancing, and members have been encouraged to bring guests.

MILL

(Continued from page 1)

give better service to Master Mix dealers, and will improve distribution of livestock and poultry feeds in the area."

The new mill, he said, will use modern manufacturing techniques, such as an electronically controlled proportioning system for feed ingredients, to produce high quality Master Mix concentrates and complete feeds. It will have a rated capacity of 500 tons per day.

In addition to producing feed, the mill will provide 15,000 sq. ft. of warehouse space for finished feeds. Modern facilities for servicing bulk truck and rail customers will also be provided.

The McMillen feed division's present Indianapolis warehouse, the Master Feed and Seed Co., Inc., will continue to service customers with Master Mix feeds, ingredients, farm supplies and seeds.

It is anticipated that the new feed mill will be completed by about April 1, 1962. Production will begin shortly thereafter under the supervision of Robert Syster, Central Soya's Indianapolis plant manager.

OREGON

(Continued from page 1)

keting orders for their products. Broilers and market eggs were excluded from the 1961 farm bill and are not eligible for marketing orders at this time.

More than 130 turkey producers and hatcherymen attended the Nov. 7 meeting sponsored by the Oregon Turkey Improvement Assn.

Wally Sawtell, Molalla, association president, said the industry is faced with a tremendous decision as to whether it wants to operate as a free enterprise or under some type of government program and urged producers to inform themselves fully before voting.

Not Much Increase

Dr. G. Burton Wood, Oregon State University agricultural economics department head, told the group that federal or state marketing orders, so far, have not increased the price of any commodity very much. Marketing orders to date have been limited to commodities on a state or regional basis, the speaker explained, adding that such orders have never been applied on a national scale for an agricultural commodity.

Dr. Wood also explained that marketing orders are self-help programs with no federal funds used, differing from stabilization programs where federal funds are used to purchase surplus commodities to support prices. The economist said legislation would be needed to include quotas at the producer level for marketing orders to be most effective—thus resulting in rigid government control.

Walt Schwedler, Portland, member of the National Turkey Advisory Committee, reviewed the turkey marketing order for hatching eggs, emphasizing that producers pay the total cost of the program. He said each handler or hatchery would deduct 25¢ per hundred hatching eggs to help pay for the program.

W. T. Geurts, Salem, manager of the Oregon Turkey Growers, outlined the order for market turkeys. In his opinion, most of the volume would be controlled at the hatchery level if both orders passed. However, an added check on volume at the processor level would be a set-aside percentage of each grower's birds.

Mr. Geurts also reported that 20¢ per 100 lb. eviscerated weight would be deducted from all turkeys handled by processors to help pay for the market turkey share of the program.

Earlier Meeting

At an earlier meeting in Portland, Ore., broiler and market egg producers were urged to consider very carefully any move into federal control by the "supply-management" route.

Russell Rathbone, Western Farmers Assn., Seattle, said the family poultry farm is "here to stay" and that progress can be best achieved by internal housekeeping.

Mr. Rathbone said current low prices are due to loose and unwise financing by feed companies and other integrated operations. Several large and small companies have lost heavily, which is acting as a check on over-expansion, he said.

To be successful the family poultry farm must be substantially larger than in the past and must produce for a specific market, Mr. Rathbone stated. He added that his organization would much prefer 10 producers with 10,000 layers each than one with 100,000 layers.

Dr. Wood, OSU economist, warned poultrymen that there is no magic in marketing orders. He advised them to give careful consideration to possible effects on consumption. What, for example, will be the effect on consumption of competing products?

In most cases, the speaker said, industry does not give enough attention to long-run implications. Where surpluses are seasonal or temporary, marketing orders may be of value. But over the long-haul they may actually delay needed adjustments, the economist explained.

TOP OF THE HOPPER

(Continued from page 2)

its current survey of 1961 feed production. While census figures on the industry have been obtained in the past, they have admittedly been incomplete and thus less useful than a good set of figures could be.

To overcome this lack of detailed, comprehensive production data, the bureau is attempting to determine production information on all kinds of feed manufacturing facilities—including hatcheries and feedlots, for example—in addition to conventional feed manufacturing plants. It plans to produce a report on 15 types of feed and concentrates and also 15 major ingredients. Currently the bureau is attempting to gather as complete a list of feed producers as possible to get the survey under way.

A PROMINENT SOUTHERN operator recently was asked if he had learned anything as a result of the broiler crisis.

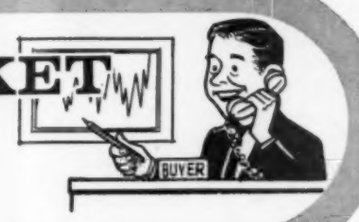
"Yes, I have," he replied. "Next time I'll know not to put everything into one thing."

CALIFORNIA FEEDLOTS generally are now using less concentrated rations than a while back, according to an observer with widespread contacts. More hay and molasses and less barley are going into the rations because of higher prices on barley. It was said that most rations are now about 65 to 70% concentrate, with hay and molasses making up the balance. Many are said to use 10 to 12% molasses.

Some lots are using completely pelleted feeds, it was indicated, but most are not. Where supplements are purchased, pellets frequently are used, however.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS



NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Los Angeles: Demand and trend steady; supply ample; dehydrated meal, 17% protein, 100,000 A $50@51; dehydrated pellet meal, 17% protein, 100,000 A $52@54; suncured meal, 15% protein $41@42; suncured crumbles, 15% protein $43@44; all unchanged.

Chicago: Demand improved; trend steady to $1 up; supply light; dehydrated, 17% protein, 100,000 units vitamin A $51.10@52.10.

St. Louis: Demand fair; trend firm; supply ample; dehydrated, 17% protein, 100,000 units vitamin A, pellets $48.50, uncharged.

Buffalo: Demand and supply fair; trend steady to higher; $59.60, sacked, Boston, up $1.50.

Ft. Worth: Demand fair for dehydrated, slow for suncured; trend steady; supply sufficient; sacked: dehydrated, 17%, 100,000 A $55.50@56, rail or truck, November, unchanged; suncured: 13%, ¼-in. grind, No. 1 $42, truck, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $51@55, up $1.

Boston: Demand fair; trend easier; supply adequate; dehydrated 17% $58, down $1; suncured, 13% $48, nominal, unchanged; both sacked.

Minneapolis: Demand good; supplies adequate; prices unchanged; 17% dehydrated, 100,000 units vitamin A reground pellets $51; oiled reground $52.

Portland: Demand fairly active; trend easier; supply plentiful; 15% suncured $37, sacked; 20% dehydrated pellet meal $65, sacked.

Kansas City: Demand fair; trend steady; supply adequate; 17% dehydrated alfalfa, 100,000 A, pellets $46@48, reground pellets $47@49; 15% dehydrated alfalfa, 125,000 A, pellets $47@51, reground pellets $48@52; 20% dehydrated alfalfa, 150,000 A, pellets $52@58, reground pellets $54@59; unchanged.

Seattle: Demand fair; trend firm; supply ample; suncured, 15% protein $40, Seattle; dehydrated, 150,000 A units $67, Seattle, both unchanged.

Denver: Demand fair; trend steady; supply ample; dehydrated $46, unchanged.

Memphis: Demand fair; supply ample; trend steady to higher; dehydrated 17% protein, guaranteed 100,000 units vitamin A $54, unchanged; reground pellets $53.60, unchanged.

ANIMAL FAT (STABILIZED)

St. Louis: Demand slow; trend steady; supply ample; yellow grease 4¾¢ lb., delivered, tank cars or trucks, unchanged.

Ft. Worth: Demand fair; trend steady; supply sufficient; prime tallow, tank cars 5¢ lb., drums 6½@7¢ lb., f.o.b. north Texas packing plants with returnable drums, down ¼¢.

Los Angeles: Demand and trend steady; supply ample; 5½¢ lb., unchanged.

Chicago: Demand slightly improved; trend steady; supply fair; bleachable fancy tallow $5.50 cwt., yellow grease $5 cwt., tank truck or carlot.

Boston: Demand and supply steady; trend steady; tallow 5⅝@5¾¢ lb., yellow grease 5@5¼¢ lb., both unchanged.

St. Paul: Demand good; supplies ample; trend firm; bleachable fancy off ⅛¢ to 5¼¢ lb., f.o.b. producer's plant.

Atlanta: Demand good; trend steady; supply ample; 5¢ lb., f.o.b. Alabama and Georgia production points, down ¼¢.

Memphis: Demand slow; supply adequate; trend barely steady; yellow grease 4⅞¢ lb., bulk, down ⅛¢; prime tallow 5⅛¢ lb., bulk, down ⅛¢.

BARLEY FEED

Baltimore: Demand and supply fair; trend firm; $43, sacked.

Chicago: Demand and supply fair; trend steady; $33, sacked.

Los Angeles: Demand slow; trend weaker; supply adequate; $2.62½ cwt., unchanged.

Boston: Demand slow; trend steady; supply light; $44.50, unchanged.

Seattle: Demand good; trend firm; supply fair; $49.50, truck lots, up 50¢.

Denver: Demand fair; trend steady; supply short; $2.55 sacked, $2.30 bulk, unchanged.

BLOOD MEAL

Chicago: Demand good; trend steady; supply fair; 80% protein $132.50, sacked.

Los Angeles: Demand slow; trend steady; supply ample; $5@5.25 a unit of ammonia, sacked, unchanged.

BONE MEAL (STEAMED)

Chicago: Demand and supply fair; trend firm; $97.50, sacked.

Cincinnati: Demand good; trend strong; supply fair; $100, sacked, Cincinnati, unchanged.

Ft. Worth: Demand fair; trend steady; supply sufficient; domestic $100, sacked, f.o.b. Ft. Worth, unchanged.

Buffalo: Demand and trend steady; supply fair; $105, sacked, f.o.b. Buffalo, unchanged.

Los Angeles: Demand fair; trend steady; supply adequate; imported $78, 20 ton lots, sacked, unchanged.

Boston: Demand and supply steady; trend steady; $105, unchanged.

Seattle: Demand fair; trend steady; supply good; $92, f.o.b. car Seattle, sacked, unchanged.

Denver: Demand good; trend steady; supply ample; $112, unchanged.

BREWERS DRIED GRAINS

Chicago: Demand improved; trend $1@2 higher; supply moderate; 26% protein $39@40.

Los Angeles: Demand and trend steady; supply light; $51, unchanged.

Buffalo: Demand fair; trend higher; supply fair to poor; $49, Boston, up $1.

Ft. Worth: Demand slow; trend steady; supply sufficient; 26% protein $57.50, sacked, November, unchanged.

Cincinnati: Demand poor; trend steady; supply adequate; $49, unchanged.

St. Louis: Demand good; trend firm; supply limited; 26% protein $42, unchanged.

Boston: Demand active; trend firmer; supply fair; $48@49, up $1.50@2.50.

BREWERS DRIED YEAST

Buffalo: Demand and supply fair; trend steady; $9.25 cwt., f.o.b. Buffalo, unchanged.

Los Angeles: Demand good; trend steady; supply adequate; 10¢ lb., 5 ton lots, sacked; 11¢ lb., 1 ton lots, sacked; 12¢ lb., less than ton lots, sacked; all unchanged.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Cincinnati: 9@11¢ lb., sacked, unchanged.

Boston: Demand and supply steady; trend steady; 11¢ lb., unchanged.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

CALCIUM CARBONATE

Ft. Worth: Demand normal; trend steady; supply sufficient; $7.50, sacked, f.o.b. north Texas, unchanged.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.05; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars, sacked; meal $10.20, 20 ton cars, sacked; both unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt., unchanged.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Denver: Demand fair; trend steady; supply ample; $12.50, carload, unchanged.

COCONUT OIL MEAL

Los Angeles: Demand slow; trend steady; supply adequate; copra cake $63@64, unchanged.

Portland: Demand fair; trend steady; supply ample; 20% solvent $65.20.

Seattle: Demand fair; trend steady; supply ample; solvent type $71, f.o.b. car Seattle, sacked, unchanged.

CONDENSED FISH SOLUBLES

Los Angeles: Demand steady; trend firm; supply limited; 3½¢ lb., unchanged.

Boston: Demand active; trend firm; supply tight; $55, nominal, unchanged.

Denver: Demand weak; trend steady; supply ample; 3¢ lb., f.o.b. West Coast, unchanged.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $43.70, meal $72.70.
Atlanta: Feed $47.10, meal $76.10.
Birmingham: Feed $44.90, meal $73.90.
Boston: Feed $48.60, meal $77.60.
Chicago: Feed $37, meal $66.
Cleveland: Feed $45, meal $74.
Denver: Feed $47.30, meal $76.30.
Ft. Worth: Feed $47.80, meal $74.80.
Indianapolis: Feed $42.25, meal $71.25.
Kansas City: Feed $37, meal $66.
Louisville: Feed $43.85, meal $72.55.
New York: Feed $48.20, meal $77.20.
Norfolk: Feed $47.60, meal $76.60.
Philadelphia: Feed $47.80, meal $76.80.
St. Louis: Feed $37, meal $76.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $42, unchanged.

Seattle: Demand good; trend firm; supply ample; feed $51, car, up $1.

COTTONSEED OIL MEAL

Los Angeles: Demand slow; trend steady; supply moderate to ample; $55, unchanged.

St. Louis: Demand fair; trend firm; supply ample; 41% solvent process $59, Memphis basis, $1 higher.

Buffalo: Demand fair to poor; trend steady; supply fair; $79.90, sacked, Boston, unchanged.

Ft. Worth: Demand good for old process, fair for solvent; supply sufficient; 41% old process, $1@62, f.o.b. mills Ft. Worth, up $1; loose hulls $15@16, unchanged; solvent with 2% fat added $64.60, unchanged; dry $63.60, up $2.

Cincinnati: Demand fair; trend higher; supply adequate; $67, up $1.50.

Kansas City: Demand fair; trend steady; supply ample; 41% solvent process $66.20, up $1; 41% old process $66.20, up $1.

Portland: Demand active; trend steady; supply adequate; 41% solvent $69.10.

Atlanta: Demand fair; trend weaker; supply limited; 41% $65, f.o.b. North Carolina, South Carolina and Georgia, unchanged; $59, Alabama; $58, Mississippi and Tennessee, unchanged.

Denver: Demand fair; trend steady; supply ample; $66, up $1.

Memphis: Demand fair; supply ample; trend steady; prime 41% protein old process $59, unchanged; 41% protein new process $49, up $1.50.

Seattle: Demand good; trend strong; supply ample; 41% expeller $72, f.o.b. car Seattle, up $2.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50, sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, minimum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Port Arthur, Texas: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload and truck load $65.75, sacked, 100 lb. multiwall bags; bulk $62.75, f.o.b. Port Arthur.

Ft. Worth: Demand good; trend steady; supply adequate; minimum 18% phosphorus, maximum 34% calcium, maximum .18% fluorine $73.45, sacked, unchanged.

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, Cincinnati, unchanged.

DICALCIUM PHOSPHATE

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Boonie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked, in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Trenton, Mich.: 18½% phosphorus and 23% calcium, bulk boxcar/hopper car $78; bagged $81; 21% phosphorus product production discontinued.

Los Angeles: Demand good; trend steady; supply adequate; 18½% phosphorus $75.10, sacked, unchanged.

Buffalo: Demand and supply good; trend steady; $82.90, sacked, Boston, unchanged.

Ft. Worth: Demand fair; trend steady; supply adequate; $81.50, sacked, unchanged.

Cincinnati: 18½% phosphorus $83.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. production points, unchanged.

Denver: Demand good; trend steady; supply ample; $88.50, carload, delivered, unchanged.

Seattle: Demand good; trend steady; supply limited; $91, ex-dock Seattle, sacked, unchanged.

DISTILLERS DRIED GRAINS

Buffalo: Demand good; trend steady to higher; supply fair to good; $53, Boston, up $2.

Cincinnati: Demand fair; trend steady; supply adequate; $43@46, down $2.75.

Boston: Demand active; trend firm; supply spotty; $51@52, up $1@2.

DRIED BEET PULP

Los Angeles: Demand and trend steady; supply adequate; $48.50@48.70 at milk shed, unchanged.

Buffalo: Demand and supply fair; trend steady; $53, sacked, Boston, unchanged.

Ft. Worth: Demand slow; supply sufficient; plain $55, sacked, November-December, unchanged.

Boston: Demand and supply steady; trend steady; $53, sacked, unchanged.

Portland: Demand fairly active; trend unchanged; supply adequate; $42.50, sacked.

Seattle: Demand fair; trend steady; supply ample; $48, delivered carlots, sacked, unchanged.

Atlanta: Demand fair; trend steady; supply good; $53.40, sacked, delivered.

Denver: Demand good; trend steady; supply ample; $60, unchanged.

DRIED BUTTERMILK

Chicago: Demand slow; trend firm; supply ample; medium acid $10.25@10.50 cwt., sweet cream $10.25@10.50 cwt., both sacked.

Los Angeles: Demand and trend steady; supply limited; 14@14¼¢ lb., sacked, unchanged.

Buffalo: Demand fair; trend steady; supply adequate; $10.75 cwt., f.o.b. Buffalo, unchanged.

Boston: Demand and supply steady; trend steady; 14¢ lb., unchanged.

DRIED CITRUS PULP

Buffalo: Demand fair to poor; trend steady; supply adequate; $32.50, sacked, f.o.b. Florida points.

Los Angeles: Demand and trend steady; supply limited; orange pulp $43, lemon pulp $41, both unchanged.

Boston: Demand and supply in balance; trend steady; $50.17, sacked, unchanged.

Atlanta: Demand fair; trend steady; supply good; pulp $32.50, sacked, f.o.b. Florida production points, unchanged; meal $27.50@30, sacked, f.o.b. Florida production points, unchanged.

DRIED SKIM MILK

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked, unchanged.

Ft. Worth: Demand slow; trend strong because of government support; supply sufficient; $16.75 cwt., sacked, up 25¢.

Buffalo: Demand fair; trend steady; supply adequate; $11.85 cwt., f.o.b. Buffalo, unchanged.

Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots, sacked; 13¾¢ lb., ton lots, sacked; both unchanged.

Chicago: Demand good; trend firm; supply fair; $12.50@13 cwt., sacked.

Boston: Demand and supply steady; trend steady; 13½¢ lb., unchanged.

Minneapolis: Demand good; supplies very tight; price up 25@50¢ to $13.50@13.75 cwt.

DRIED WHEY

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked, unchanged.

Ft. Worth: Demand fair; trend steady; supply adequate; standard $4.75, sacked, truck or rail, delivered Ft. Worth; small lots $5.25, f.o.b. warehouse Ft. Worth, unchanged.

Los Angeles: Demand fair; trend steady; supply adequate; $5.10 cwt., carload, sacked; $5.25 cwt., l.c.l., sacked; both unchanged.

Chicago: Demand quiet; trend steady; supply fair; $4.75 cwt., sacked.

Boston: Demand and supply steady; trend steady; $4.85 cwt., unchanged.

Minneapolis: Demand improved; supply adequate; price steady at $4.75 cwt., f.o.b. shipping point.

Kansas City: Demand good; trend steady; supply ample; $4.50 cwt., sacked, unchanged.

Seattle: Demand steady; trend easy; supply good; $5.70 cwt., ex-warehouse, l.c.l., unchanged.

Denver: Demand slow; trend steady; supply ample; $5.25 cwt., carload, unchanged.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand slow; trend barely steady; supply ample; $1 a unit of protein, sacked, unchanged.

Ft. Worth: Demand good; trend steady; supply sufficient; 85% protein $84@85, delivered Ft. Worth, unchanged to $2 up.

Boston: Demand good; trend firm; supply tight; $95, unchanged to $3 higher.

Atlanta: Demand good; trend stronger; supply tight; $87.50, f.o.b. Alabama and Georgia production points, up $2.50.

Memphis: Demand fair; supply barely ample; trend steady; 85% meal $83, unchanged.

FISH MEAL

Los Angeles: Demand fair; trend easier; supply better; local production, 60% protein $1.80 a unit, down ½@2½¢.

Chicago: Demand very good; supplies hard to get; menhaden, East Coast $117@120, Gulf $117@120; scrap, East Coast $113@116, Gulf $113@116; Canadian herring $1.85@1.95 a unit of protein.

Cincinnati: Demand fair; trend steady; supply adequate; $113.11, unchanged.

Ft. Worth: Demand good; trend steady; offerings light for immediate; sacked: 65% protein Peruvian $118@119, unchanged; 60% new crop menhaden $126, unchanged.

Buffalo: Demand light; trend steady; supply unavailable; 60% protein menhaden $133, f.o.b. Buffalo, unchanged.

Boston: Demand good; trend firm; supply tight; 65% Peruvian for early December $118 carlots, $120 truck loads, both unchanged.

Minneapolis: Demand fair; supplies still tight; Canadian herring steady at $1.85 a unit, f.o.b. West Coast; 60% West Coast blended steady at $138.

Portland: Demand moderately active; trend unchanged; supply ample; $2.05 a protein unit, sacked.

Seattle: Demand and supply fair; trend steady; Canadian production $1.90 a unit protein, f.o.b. truck Vancouver, B.C., sacked, unchanged.

Atlanta: Demand good; trend steady; supply fair; 65% Peruvian $114@115, sacked, f.o.b. Atlanta and Gulf ports, unchanged.

Denver: Demand fair; trend steady; supply tight; $1.95 a protein unit, f.o.b. West Coast, unchanged.

HOMINY FEED

Cincinnati: Demand poor; trend higher; supply adequate; $47, up $3.50.

(Turn to QUOTES, page 104)

Major Markets Roundup

Millfeeds Advance, Soybean Meal Declines

Advances of up to $5 in the price of millfeeds were the talk of the ingredient markets around the nation this week. In some markets soybean meal made a "U" turn and lost the ground gained in the previous week and some additional.

The millfeed price hike was attributed to limited offerings in some areas and to the fact that wet weather was delaying corn harvest in some of the Corn Belt, bringing more millfeeds into formulas.

Those same weather conditions were also said to have been responsible for pushing hominy feed higher.

Corn gluten feed and meal advanced $2.

In the Chicago market, 44% protein soybean meal was off $2.50 to $6 and the 50% dropped off $3.50 to $5.

U.S. Department of Agriculture figures show that the wholesale feedstuffs price index advanced 1.6 points this week to a level of 82.7.

East

BOSTON: Most millfeeds turned sharply higher in the local market last week as mill production failed to keep up with a relatively sudden and concerted buying interest. Leading gainers were bran, middlings, brewers grains and hominy feed.

Slow movers, as measured by trade demand, included alfalfa meal, linseed oil meal and soybean meals. The over-all supply situation continued spotty.

BUFFALO: Active demand sent the ingredient market higher as some supplies continued short of requirements. Millfeeds were active in the rise, with bran, middlings and red dog each up $3.

All grains were firm and likely to remain that way unless there is a "terrific" increase in receipts or a change in government policy. Corn was up 1 to 2¢; oats gained 1¢, and barley advanced 1½ to 2¢.

Linseed oil meal rose $1, and gluten meal advanced $2. Meat scraps were off $2.50. Hominy was up $1 and practically unavailable for nearby delivery. Other mid-proteins were also higher, with gluten feed up $2, brewers' grains were up $1 and distillers' grains up $2.

Animal tallow was weak at 5½¢ lb. and may give up another ½¢. Soybean oil meal declined 50¢ on a little easier supply and because the market is running into previous contracts rather than day-to-day buying.

Midwest

CINCINNATI: Supplies were adequate to meet the quiet demand for feed ingredients this week.

Millfeeds advanced $4. Hominy feed was up $3.50 and screenings rose $2. Also, advancing were cottonseed oil meal, by $1.50, and alfalfa meal, by $1.

On the lower side were: Distillers dried grains, $2.75; soybean oil meal, $1, and molasses, ¼¢.

CHICAGO: Price ranges for soybean meal did another "U" turn during the week, and all the recovery of the preceding one and a lot more was wiped out.

Production apparently had been stepped-up and, instead of the tightness that was noted in meal offerings a couple of weeks ago, just the reverse has been true. The general feeling is that processors have been operating at a pace considerably at variance with the very skimpy September rate that was experienced, and this in turn cannot help but be reflected in a healthier situation in the meal market from the buyer's standpoint.

Quotes on 44% protein meal suffered somewhat more than did the 50% content; unrestricted billing 44% was available at $59 which is $6 off for the week, and ETL, at $56.50, lost $2.50 per ton. The 50% protein content, unrestricted billing, meal was bringing $64, off $5 for the week and ETL was at $61.50, for a loss of $3.50 during the week.

The action of both of the bean products might well be causing some concern in Washington where agriculture officials have been in hopes that the demand for both meal and oil would be broad enough to ultimately justify the high loan value they established. That loan value was a big factor in bringing about the 700 million bushel crop which now stares those government officials in the face.

MINNEAPOLIS - ST. PAUL: Another run-up in the price of millfeeds was the feature of the ingredient market in the Twin Cities this week. Prices advanced 50¢ to $1.50. Sacked bran and sacked middlings were each up $1.50, with the respective prices being $42 and $43. Red dog was up 50¢ to $44.

Soybean meal prices were steady to $2 lower, with 44% being off $1.50 to $2. The 50% protein was off 50¢ to $1, and 41% expeller held steady. The price on 44% closed at $52.50 to $53, and 50% was $59.50. The 41% expeller was $60.

Prices on the higher side included those of linseed meal and dried skim milk.

Lower tags were noted on animal fat, molasses and some oat products.

ST. LOUIS: Feed ingredient buying slowed down last week, leaving trade people with the impression that pipe lines had begun to fill up. Only a few items were in short supply, notably hominy feed, screenings and oat mill feed. Practically everything else seemed to be available in abundance. Formula feed outgo failed to maintain its recent pace.

Soybean meal demand was only moderately active and price movements irregular. Early in the period the market rallied to show small gain but later eased off and closed $1 lower. Traders blamed the downturn on news that a quantity of export meal had been cancelled and would be put back in the domestic market for the week of Nov. 20.

Millfeed offerings were somewhat limited, and prices improved $3.50 on bulk bran and $5 on bulk middlings. Demand was spurred by wet weather delays in harvesting corn. Buyers, however, were not inclined to take on larger stocks than necessary at the higher price levels.

The slow movement of new crop corn was responsible for the heavy demand and higher price on hominy feed also. Offerings were hard to uncover even at the full advance of $1.50 a ton.

South

ATLANTA: Many of the pipe lines for soybean meal and cottonseed meal are being filled, and demand of feed manufacturers has fallen off, resulting in more offerings from the mills at slightly reduced prices.

However, most buyers continue to buy on an as-needed basis, as many believe that by the middle of December they will see prices on both cottonseed meal and soybean meal, as well as other feed ingredients, on the down side.

The movement of citrus pulp has been steadily increasing each week and, due to the lateness in operations, the inventory of pulp on hand will not be too great at the beginning of the production season. Prices remain firm at $32.50 f.o.b.

MEMPHIS: Millfeed was a feature of the ingredient market here.

The demand was good, improved from the previous week, attributed to seasonal usage increase, and bulk prices ranged from $3.70 to $4.70 higher than the week before. The exceptionally strong market appears to have topped out at these levels and could possibly work lower in the next week to 10 days.

Cottonseed oil meal business was considered by the trade to be fair to good, especially nearby shipment. Some buying was done in deferred months at a discount under immediate.

The soybean oil meal market settled down and premiums for immediate shipment declined. The demand was better, but still not termed good. Most buying interest continued to be confined to nearby positions.

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oilseed meal futures prices were irregular Nov. 14 compared with one week earlier. Unrestricted soybean oil meal closed 75¢ lower to 25¢ a ton higher, while bulk solvent cottonseed oil meal ended 25¢@$1 higher.

Trading volume amounted to 3,000 tons of unrestricted soybean oil meal and 200 tons of bulk solvent cottonseed oil meal.

Southwest

KANSAS CITY: Major ingredient prices were steady to lower this week as demand for most ingredients turned very slow, resulting in lower price levels.

Soybean oil meal was off about $2 to $2.50 for the week. There was some mixer interest in spot supplies, and spot cars were commanding premiums, but demand for deferred shipments was almost lacking.

Millfeed prices were about $2 over last week's prices but were down from the high prices established the first of the week. Prices of sacked millfeeds held better than their bulk counterparts, reflecting the slower demand from mixers at present levels.

Prices of alfalfa products ruled about unchanged on moderate demand; however, the demand for suncured alfalfa pellets was slightly improved. There was no significant price change.

FT. WORTH: The most notable feature of the ingredient market last week was the strength in millfeed. Offerings were very light with most mills sold up through November and prices up $4 to $4.50 on bulk millfeed and $3 on sacked bran and shorts.

Dried skim milk was up 25¢ on account of the government price support program. Offerings of reground oatfeed were light and quotations $2.50 higher. Cottonseed meal was firm and up $1 on old process and $2 on solvent, but demand was said to be falling off on the advance.

Offerings of soybean meal were sufficient and quotations 50¢ to $1 lower. Animal and vegetable fats were off ¼¢ per lb.

In the feed grains, corn was up 1¢ per bushel and oats 2¢, but milo was unchanged because of the government offerings.

West

SEATTLE: With union officials and packers still negotiating, Canadian herring meal remained unchanged and scarce at $1.90 per unit, Vancouver, B.C., and an agreement appeared imminent.

Soybean oil meal continued its upward trend and was quoted at $87.80 at the close. Cottonseed meal firmed $2 per ton.

No. 2 yellow corn strengthened $1 to $51. However, milo remained unchanged at $44. Barley firmed to $49.50 due to export demand. Heavy white oats dropped $1 due to a light demand.

Millrun continued firm due to light offerings and fairly good demand.

PORTLAND: Feed ingredient quotations showed a little more strength than during the previous week as a reflection of improved trade interests.

Quotations for soybean meal, wheat millfeed and Canadian herring meal were higher, while listings for other items were mostly unchanged.

Soybean meal quotations advanced 50¢ to $1 a ton in the face of tighter offerings from eastern shippers. Wheat millfeed quotes were mostly 50¢ higher. Buying interest for this item was slow, but tighter offerings made the difference.

Quotations for 70% Canadian herring meal gained 5¢ per protein unit this week.

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QUOTES

(Continued from page 102)

Buffalo: Demand fair; trend higher; supply poor; $55, nominal, Boston, up $4.
Chicago: Demand better; trend $1 higher; supply fair; $43.
Los Angeles: Demand good; trend firmer; supply limited; hominy meal $42, hominy pellets $54, both unchanged.
St. Louis: Demand good; trend firm; supply scarce; yellow $41.50, up $1.50.
Boston: Demand active; trend firmer; supply tight; $54.50, up $3.
Kansas City: Demand good; trend strong; supply scarce; white or yellow $38@38.50, up $2.
Seattle: Demand fair; trend firm; supply limited; $53, delivered carlots, up $1.
Memphis: Demand poor; supply ample; trend steady; white $44, up $1.20; yellow $44, up $1.20.

LINSEED OIL MEAL

Buffalo: Demand and supply fair; trend higher; $57.50, Minneapolis, up $1.
Ft. Worth: Demand slow; trend steady; supply sufficient; 34% protein, extracted $72.40, November, unchanged.
Chicago: Demand good; trend $1 higher; supply moderate; Minneapolis basis: Solvent $57.50, expeller $62.50.
Minneapolis: Demand good; supplies scarce; 34% solvent up 50¢ to $57.50; 32% expeller steady at $61.50.
Portland: Demand fairly good; trend easier; supply plentiful; 34% solvent $62.60, sacked.
Seattle: Demand fair; trend firm; supply good; 31% protein, California production $90, delivered, carloads, sacked, unchanged.
Los Angeles: Demand slow; trend steady; supply moderate to ample; local production, 31% protein $71, unchanged.
Cincinnati: Demand poor; trend steady; supply adequate; new process $56.50, old process $61.50, Minneapolis, unchanged.
Boston: Demand slow; trend easier; supply light; 34% $74.20, off $3.50.
Denver: Demand fair; trend steady; supply ample; $71, up 50¢.

MEAT AND BONE MEAL

Cincinnati: Demand good; trend steady; supply fair; 50% meat and bone scraps $77.50, Cincinnati, unchanged.
Ft. Worth: Demand fair; trend steady; supply sufficient; meat and bone $73@75 bulk, $75.50@77.50 sacked, f.o.b. Ft. Worth, unchanged.
St. Paul: Demand slow; supplies ample; price unchanged at $84@88.
Portland: Demand moderately active; supply adequate; trend steady; 50% protein $80, sacked.
Kansas City: Demand fair; trend steady to lower; supply ample; 50% scraps $75@77.50, unchanged to $2.50 lower.
Seattle: Demand good; trend steady; supply ample; $1.70 a unit protein, ex-processing plant, sacked, unchanged.
Buffalo: Demand fair; trend steady to lower; supply very tight; 50% meat scraps $80, f.o.b. Buffalo, off $2.50.
St. Louis: Demand fair; trend easy; supply ample; 50% $78, down $2.
Chicago: Demand fair; trend unchanged; supply moderate; 50% protein $85, sacked.
Los Angeles: Demand and trend steady; supply ample; 50% protein $1.75 a unit, unchanged.
Boston: Demand and supply in balance; trend steady; $1.20 a protein unit; converted 50% $82, both unchanged.
Denver: Demand fair; trend steady; supply ample; $72, down $3.
Memphis: Demand fair; supply adequate; trend steady; 50% protein $77, without billing, unchanged; 50% protein $79.50, with rail transit, unchanged.

MEXICAN PHOSPHATE

Brownsville, Texas: Mexican natural ground rock; 13% phosphorus $39 sacked, bulk $2 less.

MILLFEED

Minneapolis: Demand fair; supplies about adequate; prices higher; sacked bran up $1.50 to $42; sacked middlings up $1.50 to $43; sacked red dog up 50¢ to $44.
Portland: Demand narrow; trend strong to higher; supply tighter; mostly $39, sacked.
Kansas City: Demand fair; trend steady to weaker; supply ample; sacked bran $41.50@42, up $2; sacked shorts $43@43.50, up $2; bulk bran $37.50@38, up $1.50; bulk shorts $39.50@40, up $2.50; bulk middlings $39@39.50, up $2.
Seattle: Demand good; trend firm; supply fair; $39, delivered common transit points, carlots, unchanged.
St. Louis: Sacked bran $47, up $4; shorts $49, up $4; bulk bran $42.50, up $3.50; middlings $44.50, up $5.
Buffalo: Demand good for bran and middlings, fair for red dog; trend higher; supply fair for bran and middlings, fair to poor for red dog; bran $46.50, up $3; middlings $47.50, up $3; red dog $52.50, up $3; all prices f.o.b. Buffalo.
Los Angeles: Standard millrun $45@45.50, slow demand, firmer trend, tighter supplies, up $1; red bran $55@56, very slow demand, trend much higher, adequate supplies, up $4.
Chicago: Demand very good; trend up $1.50@3.50; supply moderate; standard bran $43.50, standard midds. $45, red dog $47, nominal.
Ft. Worth: Demand good; trend firm; offerings extremely light for immediate, most mills sold up through November; bran, bulk $46.50, burlaps $50; gray shorts, bulk $49, burlaps $52; middlings, bulk $48.50, delivered Texas common points; bulk bran up $4.50, bulk shorts up $4, and middlings up $4; sacked bran and shorts up $3.
Cincinnati: Demand poor; trend higher; supply adequate; bran $46.50, middlings $47.50, up $4.
Boston: Demand active; trend strong; supply tight; bran $52@53.50, up $4@5.50; middlings $54@55.50, up $3@4.50.
Denver: Demand very good; trend steady; supply mediocre; shorts $44.75, unchanged; bran $46.25, up $4.50; millrun $47, up $3.25.
Memphis: Demand good; supply ample; trend steady; wheat bran $45.50, up $3.70; gray shorts $47.50, up $4.70; standard midds. $45.50, up $3.70.

MOLASSES

Minneapolis: Demand fair; supplies adequate; price off $2 to $33 for blackstrap, tank truck, delivered Twin Cities; $32 for blend, steady.
Kansas City: Demand slow; trend steady; supply ample; 12½¢ gal., New Orleans, unchanged.
Seattle: Demand and supply good; trend steady; $25.75, f.o.b. Seattle tank truck lots, unchanged.
Buffalo: Demand fair to good; trend steady; supply good; 16½¢ gal., f.o.b. Albany, unchanged.
Ft. Worth: Demand fair; trend steady; supply sufficient; blackstrap 13¾¢ gal., f.o.b. Houston; truck $30.21, delivered Ft. Worth, seller's market price on date of shipment, unchanged.
St. Louis: Demand slow; trend steady; supply ample; blackstrap 12½¢ gal., tank cars, New Orleans, unchanged.
Los Angeles: Demand good; trend steady; supply ample; $24.50, f.o.b. tank cars; $24.75, f.o.b. tank trucks; both unchanged.
Cincinnati: Demand fair; trend steady; supply adequate; 12¾¢ gal., New Orleans, down ¼¢.
Boston: Demand and supply steady; trend steady; 16½¢ gal., tank cars, unchanged.
Atlanta: Demand fair; trend steady; supply limited; citrus $20, f.o.b. Florida production points, unchanged.
Denver: Demand fair; trend steady; supply ample; $32.70, tank car, unchanged.
Memphis: Demand fair; supply ample; trend steady; blackstrap 12½¢ gal., tank car, f.o.b. New Orleans, unchanged; $27.60, delivered Memphis, truck, down 43¢.

OAT PRODUCTS

Ft. Worth: Demand slow; trend steady; supply sufficient on oat millfeed, offerings light on reground; 10% protein oat millfeed $41, sacked, unchanged; reground $26.90, up $2.50.
St. Louis: Demand good; trend firm; supply limited; white pulverized $43, unchanged; reground oat feed $17.50, up $4.
Chicago: Demand good; trend much stronger; supply moderate; reground oat feed $15.50; No. 1 fine ground feeding oatmeal $73; feeding rolled oats $76@79.
Minneapolis: Demand fair; supply adequate; sacked feeding rolled off $1 to $84; sacked feeding oatmeal steady at $70; sacked crimped off 50¢ to $63; sacked pulverized steady at $46.50; sacked oat feed steady at $20.
Kansas City: Demand good; trend stronger; supply adequate; oat mill by-product $19@20, up $3; feeding rolled oats $75@76, up $1.
Seattle: Demand fair; trend easy; supply good; 38 lb. or better $50, delivered truck lots, down $1.
Buffalo: Demand and supply fair; trend steady to higher; $28.60, sacked, Boston, up $3.
Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $48@47, unchanged.
Boston: Demand and supply steady; trend steady; white pulverized $54.60, sacked; reground oat feed $25, sacked, both unchanged.

PEANUT OIL MEAL

Los Angeles: Nothing available for quotation.
Atlanta: Demand fair; trend steady; supply limited; 45% solvent process $66, f.o.b. Alabama producing mills, up $3.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend steady; supply adequate; $1.55 a unit of protein, sacked, unchanged.
Ft. Worth: Demand good; supply scarce; $85@87.50, sacked, f.o.b. Texas plants, down $2.50.
Boston: Demand and supply good; trend steady; $85, unchanged.
Atlanta: Demand good; trend stronger; supply short; meat meal $77, f.o.b. Alabama and Georgia production points, up $1.
Memphis: Demand slow; supply light; trend steady; 55% meal $82.50, sacked, nominal, unchanged.

RICE BY-PRODUCTS

Los Angeles: Demand slow; trend steady; supply very limited; California production, high fat content, bran $53, sacked, unchanged.
Ft. Worth: Demand fair; trend steady; light offerings of standard rice bran, sufficient on solvent; standard rice bran $37, sacked, f.o.b. Houston; solvent rice bran $30.50 bulk, $34.50 sacked, f.o.b. Texas rice mill, unchanged.
Buffalo: Demand only fair; trend steady; supply good; $56, sacked, f.o.b. Buffalo, unchanged.
Atlanta: Demand fair; trend steady; supply limited; bran $46.50, sacked, delivered, up 50¢.

SCREENINGS

Los Angeles: Demand slow; trend steady; supply adequate; ground barley $35, sacked, unchanged.
Chicago: Demand moderate; trend firm to 50¢ up; supply fair; ground grain $30.50, Canadian $24.50.
Buffalo: Demand and supply fair; trend steady to higher; ground $34, sacked, New York, lake and rail, up 50¢; unground $28 bulk, New York, up 50¢.
Minneapolis: Demand fair; supplies ample; prices unchanged; unground Canadian $19; domestic lights $3@10; domestic mediums $12@20; domestic heavies $20@28; 15% flax screenings $46.
Cincinnati: Demand good; trend higher; supply adequate; unground grain screenings $20.75@22.75, up $2.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.25.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $24.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.33.

SOYBEAN OIL MEAL

Seattle: Demand fair; trend steady; supply ample; $82.80, delivered, carlots, up $1.
Minneapolis: Demand slow; supplies adequate; 44% off $1.50@2 to $52.50@53, Decatur; 50% off 50¢@$1 to $59.50@60; 41% expeller steady at $60.
Portland: Demand light; trend strong to higher; supply ample; 44% $81.60, 50% $87.60.
Kansas City: Demand good; trend weaker; supply ample; 44% solvent $57.50@58, down $1.
Buffalo: Demand and supply fair; trend steady to easier; $57, Decatur, off 50¢.
Ft. Worth: Demand good; trend steady; supply sufficient; 44% $68.50@70.50, November, down 50¢@$1; $67@69, December; 50% $76.50@78.30, November, unchanged to 80¢ lower; $73.90@75.50, December.
St. Louis: Demand fair; trend easy; supply ample; 44% $61, Decatur basis, down $1.
Chicago: Demand tapering off; trend of 44% $2.50@6 lower, 50% $3.50@5 lower; supply fair; Decatur basis, 44% protein, unrestricted billing $59, E.T.L. $56.50; 50% protein, unrestricted billing $64, E.T.L. $61.50.
Los Angeles: Demand very slow; trend firmer; supply ample; $82.10@82.60, up $1.50@2.
Cincinnati: Demand good; trend steady to higher; supply adequate; $61, Decatur, down $1.
Boston: Demand cautious; trend easier; supply ample; 44% $56, f.o.b. Decatur, down $1; 50% $63@64, off $1@2.
Atlanta: Demand fair; trend weaker; supply ample; 44% $68.70, delivered.
Denver: Demand good; trend steady; supply ample; $71, up 50¢.
Memphis: Demand fair; supply ample; trend steady; prime 44% solvent $61, f.o.b. Memphis, down $2.

TANKAGE

Chicago: Demand and supply fair; trend firm; 60% protein $95, sacked.
Kansas City: Demand good; trend steady; supply tight; 60% digester $87.50, unchanged.
St. Paul: Demand good; supply fair; price steady at $89@94.
Ft. Worth: Demand fair; trend steady; supply scarce; 60% digester $87.50, sacked, Ft. Worth, unchanged.
Cincinnati: Demand good; trend steady; supply ample; 60% digester $87.50, Cincinnati, unchanged.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $105 bagged, $99 bulk, delivered in all states east of and including New Mexico, Colorado, Wyoming and Montana.
LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent $96, f.o.b. bagged; $90, bulk, cars or trucks; freight equalized with nearest producing point.
Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent, $95 bagged, $91 bulk, f.o.b. Pryor, freight equalized with nearest producing point; $100 bagged, $96 bulk, delivered in cars or trucks to New Mexico, Colorado, Wyoming and all states to the East.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; trend lower; supply sufficient; 4¾¢ lb., f.o.b. north central Texas, down ¼¢.
Los Angeles: Demand good; trend easier; supply adequate; 5⅝¢ lb., down ⅛¢.

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SALES, EARNINGS

(Continued from page 1)

$10,387,268, compared with the $8,354,512 earned in the preceding fiscal year. After provision for federal and state income taxes in the amount of $5,355,758, net earnings totaled $5,031,510, as against $4,183,807 in 1960. This was equal to $1.76 per share on the 2,858,458 shares outstanding at the year's end and compares with $1.46 per share earned in 1960, computed on the same number of shares.

Cash dividends of $1.10 per share were paid during the fiscal year at the rate of 27½¢ quarterly. This was the 20th consecutive year in which cash dividends were paid. A 2% stock dividend was distributed to shareholders in August, 1961.

In their report to shareholders, Harold W. McMillen, chairman of the board, and Dale W. McMillen, Jr., president, said, "Financial results for the year reflect a record sales tonnage of Master Mix Feeds and an increase in the volume of Chemurgy products sold. We processed a larger volume of soybeans and experienced a more favorable profit picture compared to last year.

Grain Division Increase

"The grain division enjoyed more favorable profits in their merchandising activities, even though these activities were somewhat affected by the collapse of the Wheeler Lock on the Tennessee River."

They called attention to the company's growth during the past year, including the purchase of the Chemurgy division facilities from the Glidden Co.; acquisition of a 50% interest in the A&D Barge Lines, Inc.; the purchase of a feed plant at Lockhart, Texas; the formation of a joint venture company (Central Soya-Seriom, S.p.A.) in Italy; the opening of the company's first overseas office in Rotterdam, The Netherlands; and the recent purchase of soybean processing and grain storage facilities at Bellevue, Ohio.

Looking to the future, they said, "We are optimistic about the profit contributions from all of the company's divisions for the coming year." Enthusiasm was expressed over the earnings prospects of the Chemurgy division, which are expected to be bolstered by developments of new products and expanding markets for products now in production.

Capital expenditures for the past year totaled approximately $12 million and included the major investments mentioned as well as purchase of additional equipment for the manufacture of soya products, construction of new feed research facilities and the erection of additional grain storage.

Largely as a result of these investments, working capital decreased by $7,869,968 to $40,552,940. Inventories of $23,835,142 Aug. 31, 1961 were $4,507,421 less than a year earlier.

During the year, a new corporate identification program was implemented and the new corporate mark adapted to the company's facilities, products and communications media.

In its 27th year, Central Soya has major plants at Decatur and Indianapolis, Ind.; Des Moines, Iowa; Gibson City and Chicago, Ill.; Lockhart, Texas; Bellevue and Marion, Ohio; Harrisburg, Pa., and Memphis and Chattanooga, Tenn.

ORDERS

(Continued from page 1)

volume control on marketing. This industry has had broad experience with regional or state marketing agreements and orders, but observers at the convention indicated that industry representatives were barely aware of the impact of a national order.

Since many in this industry, with experience with this method of government control, could not fully understand the impact of a national order, it is understandable that many in the turkey industry may not be clear on the proposals until government officials make full disclosures, through examination at hearings and meetings, of all aspects of the proposed orders — in addition to the salesmanship which the advocates up to this time have been using to espouse the alleged merits.

Some government spokesmen seem to be like the door-to-door salesman who rings the bell, gets his foot in the door, expounds the virtues of the item he sells and never mentions any possible defects or problems.

Possible Effects

Turning to possible effects of the proposed orders—responsible USDA officials pooh-pooh the suggestion that turkey hatching eggs or poults could rise to extremely high prices.

One official said, "Why, that could not happen." But his saying so is not proof that it could not. One might remember OPA days, with price control and rationing, and the black market and evasions which developed.

For example, an egg producer might find a poult producer who was badly in need of eggs at a critical time in his schedule and was unable to get his allotted share of the eggs. Some turkey grower also might be in serious need of poults at a particular time. And the situation could work out to some sharp premiums. Since the procedure USDA is proposing carries no price or ration controls, price will have to ration supplies to individuals in parts of the production process.

In the operation of a national agreement and order, there is great responsibility on the industry committee which manages the order in assuring equitable treatment of all segments of the industry, and also in regard to seasonal marketings and marketing by weight.

Suppose that a big influential grower urgently needs poults and the hatcheryman for some reason is in a short supply situation in supplying all of his available customers. What would be the decision in providing poults? Will he make equitable allotments among all, or will he favor the big influential grower? Such are the obscure problems which may arise.

Feed Manufacturer

What happens to the feed manufacturer? How may he plan sales and deliveries to customers if they are subject to many unseen obscurities of the turkey proposals which becloud the entire operation to most of the industry, except for USDA proponents and some others?

Industry sources were advising this week, that regardless of one's own position, everyone should make a careful examination of recommendations of USDA sponsors and industry advocates.

PREVIEW

(Continued from page 1)

ly for Minnesota turkeymen to discuss the proposed marketing orders for turkeys and turkey hatching eggs. The first meeting and the following sessions at Olivia and Thief River Falls were sponsored by the University of Minnesota, the Minnesota Turkey Growers Assn. and the U.S. Department of Agriculture.

Evidence of discontent was held in check while the chairman, Dr. E. L. Johnson, head of the University of Minnesota's poultry department, opened the meeting and Richard Larkin, USDA's representative, outlined the purposes, the provisions and the proceedings of the proposed orders.

Session Warms Up

But once the session was opened to questions from the floor, the atmosphere warmed up as possible consequences of using marketing orders in the turkey industry were voiced.

The scores of questions asked were, in the main, directed at Mr. Larkin and Dr. Francis J. Smith, a University of Minnesota agricultural economist who was invited to participate because of his familiarity with the economic causes and effects of regional and state marketing orders for vegetables, fruits, nuts and milk.

At first, the questions asked were more or less intended to clarify certain points having to do with the mechanics of the orders. But as the session continued after lunch, the questions gradually changed into opinionated pronouncements—most of them against what the marketing orders could and might lead to.

Although no questioners were asked to identify themselves, it appeared from their comments that most of the spokesmen against marketing orders were independent growers. A turkeyman, apparently in favor of the orders, sized it up this way in a private conversation following the session: "It looks like most of the fellows who want marketing orders stayed home to mind their business. They've already made up their mind and didn't bother to come."

One of the final statements from the floor was this: "If we get into this thing it seems like we're going to come out at the break-even level where only the integrator can benefit because he can make a profit at some other point in his operations. The independent can't stay in business. I think the whole thing revolves around the proposition of whether we want to be an integrated industry."

It was indicated here that all the possible entanglements of the proposed orders could not possibly be written into law and, therefore, the groups regulating the orders for the industry and the Secretary of Agriculture would necessarily have power to work out solutions to problems not specifically spelled out in the marketing orders. For this reason, it was observed, it is important that the administrative bodies be representative of the industry as a whole and be conscientiously aware of their responsibilities.

Administration of the orders would be in the hands of a 60-member advisory board and a 19-member administrative committee. Although two boards and two committees could be organized—one set for the turkey order and another set for the hatching egg order—it is most likely, Mr. Larkin said, that only one board and one committee would be selected to administer both orders.

Asked if there was "enough discretion left in the proposed orders for the committee to work," Mr. Larkin said the administrative body would have plenty of leeway for administrative purposes. "Because it's impossible to conceive all of the problems that might be encountered," he said, "it is necessary that the board and committee be given some latitude."

While this particular questioner apparently was worried about the industry committee not having enough authority, there were others at the meeting who were concerned because they were afraid it might have too much power and that there might be a race among some representatives of the industry for membership chairs.

"It'd be nice to be on the board so you'd know what was going to happen before it did," remarked a turkeyman who couldn't wait to be recognized by the chairman.

Hatching Egg Order

Most attention was given to the proposed hatching egg order because it was observed by several commentators that if its provisions were administered properly there probably would be little or no need for a turkey order. But, as pointed out by Mr. Larkin, "the turkey order is designed to take care of any mistakes made with the egg order."

Great emphasis was placed by some on the possibility that the turkey hatching egg order would permit a hatchery to allocate its entire quota of poults to a single grower. The group was told that there is nothing in the provisions of the order to prevent, for example, a hatchery with an allotment of 100,000 poults and five customers, who wanted 20,000 poults each, from selling all of the 100,000 poults to one grower, leaving the others "out in the cold." This situation, it was observed, could lead to growers rushing into contracts or some other integrated relationship with hatcheries.

"Will we all be scrambling for eggs and bidding up the price when the administrative committee decides to cut back the supply by 25%?", one man asked.

This is where the unfair trade practices provisions might come into play, this questioner was told.

"Why can't we regulate who poults can be sold to?" it was asked.

Mr. Larkin answered: "Because the law specifically says we can't control the producer."

"We say we can't do this with meat, so how can we do it with hatching eggs?" another turkeyman asked. The best answer he got for this question was that this is permitted by law.

Three Methods

This latter question was a part of discussion centering around the three methods proposed for regulating the volume of hatching eggs put in incubators. This particular turkeyman's question and the observations of others were indicative of the fact that the use of one of these methods, generally referred to as "No. 2" would actually amount to placing controls on hatching egg producers.

Under method No. 2, the Secretary of Agriculture would establish the desirable quantity of hatching eggs for the allotment period which all handlers could receive at hatcheries for hatching in the allotment period.

The important word here, as brought out in the dicussion, is "receive." Under method No. 2, the administrative committee would proportion the "desirable" quantity among handlers by establishing an allocation base and allotment for the allotment period. Each allocation base and allotment would be referrable to each producer of hatching eggs.

Mr. Larkin said he believed it was most likely that method No. 3 would be selected by the administrative committee and approved by the Secretary of Agriculture. This method specifies, he said, that a certain percentage of eggs would be set aside and this percentage would be uniformly distributed among all units of eggs received for hatching.

(Provisions of the three methods are outlined in a related analysis story starting on page 1.)

Effect of High Prices

The discussion pointed out that growth of the turkey industry could be retarded if turkey prices went too high. Consumer demand probably would drop off. Mrs. Housewife more than likely would substitute competing meats. High prices also would affect export demand and might encourage imports from Canada or elsewhere.

"What is our responsibility to the consumer?" it was asked. "Say the cost of producing a turkey is 20½¢ lb. Would we be expected to sell our birds at a break-even price or would we be permitted a certain amount of profit and be able to sell at 24¢, 25¢ or higher?"

Mr. Larkin answered this one by saying, "According to law the price could go up to the parity price—which is now about 36¢—but this is an unrealistic figure and letting it go up that high would not be fair to the consumer. The cost of production would have to be taken into consideration in establishing a fair price level."

He said it would be foolish for the administrative committee to let the

industry price itself out of the market.

In addition to comments about the possibility of turkey losing a competitive position relative to other meats, considerable concern was expressed over the likelihood of competition within the industry itself being lessened.

Mr. Larkin was asked: "Is it the intent of these orders to eliminate all good competition?"

He answered: "The orders would not affect competition. You'd be just as competitive as you are now."

"Yes, but what if a grower is unhappy with his source of poults?" came the rebuttal. "Where is he to go if quotas of all hatcheries are filled up?"

And it was along about here that someone wondered if an independent hatchery man, which had served customers in the past, might keep his entire allotment of poults and feed them himself.

Dr. Smith had a question himself, but it was part of his presentation concerning the probable economic impact of marketing orders. He asked, "What is the industry structure going to look like if marketing orders are used?"

After listening to opinions expressed early in the meeting, he said, "It seems there would be a strong tendency toward further integration. Feed companies and others will want definite sources of poults for their customers."

Another question from the floor: "Has any consideration been given to 1957-58-59 as bases for establishing allotments instead of later? Could it be that a lot of people expanded in 1960-61 just to establish big bases and are the real villains in this respect?"

Mr. Larkin said earlier base periods were considered, "but the majority picked 1961. We're not stuck with 1961, however. Any other period can be recommended by the administrative committee."

Handling of Setaside

A number of questions were asked about the disposition and handling of pools of surplus turkeys created when the administrative committee orders that certain percentages be set aside at the handler level.

Responding to these questions, Mr. Larkin explained that the administrative committee could get a commercial or Commodity Credit Corp. loan to pay for the handling of this setaside. Then, when the pool was marketed and funds from this sale were pro rated back to the producers who had birds in the pool, the loan and interest would be paid off with what was left.

The proposed turkey marketing order definitely stipulates that the administrative committee would have the authority to sell setaside surplus turkeys through export channels or to an agency of the government for non-competitive uses. It was speculated at the meeting here that the committee probably also would be allowed to hold setaside birds in storage until the market was high enough to support returning them to the free market.

Economic Considerations

Dr. Smith, the University of Minnesota agricultural marketing specialist who was assigned the task of explaining the economic consideration of the marketing order on Minnesota turkey production, started his discussion by stating the objectives of the proposed orders: Orderly marketing, industry stability and fair incomes for the individuals and businesses which make up the industry.

"The egg order is the one that probably would create the most income stability," he said. "And it's possible that prices could be raised by the marketing order."

Dr. Smith explained that a 1% change in the quantity of turkeys usually results in a 1% change in price. "Therefore, total income doesn't change much," he said. "It could happen that if prices went up total income would be less. The primary impact of marketing orders would be on net income."

In this portion of the discussion it was observed that it might be best to place more emphasis on orderly marketing than on prices and profits. Management abilities of individuals and companies within the industry still would be required, it was said.

Marketing orders could not guarantee profits, it was observed. "You might net more money under a free market over a long period of years," Dr. Smith said, "but marketing orders might tend to level out income over the years." And he added, "High prices could be as bad as low prices. . . . You could experiment and see if marketing orders work. If not, vote them out."

Mr. Larkin said marketing orders are "just a marketing tool. . . . Rather than insuring profit for everybody, they are more realistically 'disaster insurance.' They are not a substitute for economic adjustments."

Dr. E. W. Learn, another representative of the University of Minnesota's agricultural economics department, said it was important to realize that "we're asking too much when we ask for 1960 incomes in 1962, either from marketing orders or from a free market, at a time when production is very much out of balance with demand. Problems in the future may not be so great as they are now and could eventually be relatively insignificant."

Substantiation Necessary

In remarks which preceded questions, Mr. Larkin emphasized that statements recorded during the six public hearings must substantiate the need for turkey and turkey hatching egg marketing orders before they can be initiated.

The first of these hearings is scheduled for Nov. 20-22 at Richmond, Va. Other hearings are: Nov. 24-27 at Des Moines, Iowa; Nov. 29-Dec. 1 at Las Vegas, Nev.; Dec. 4-6 at Oklahoma City; Dec. 8-11 at Chicago, and starting Dec. 12 at Albany, N.Y.

Mr. Larkin noted that all but the Albany hearings are scheduled for three days (some hearing dates include four days, but these are over Sundays when proceedings will be suspended) but Albany is the last one and no definite closing date can be set until all persons wanting to be heard have spoken. The Albany hearing could be completed in equal time or it could go on for some time, he said. Mr. Larkin said he knew of a milk marketing order hearing that continued for 102 days.

He was asked what the earliest date for the referendum could be should the Secretary of Agriculture consider a vote necessary. Mr. Larkin said there was considerable misunderstanding on this matter but he estimated that if the Albany hearing continued for no longer than the others that a referendum could be staged early in February.

After the hearings are held, he explained, the Secretary of Agriculture will evaluate the testimony and, if considered necessary, some provisions may be rewritten and the revised proposed marketing orders published in the Federal Register. The next step would be the referendum.

"The proposed marketing orders are the first in national scope and for a livestock commodity," Mr. Larkin said. "There are in existence about 40 orders for fruits, vegetables and nuts and about 80 for milk, but these are state or regional in nature."

Voting Explanation

Mr. Larkin explained that only the producers would vote in a referendum which would be scheduled if the Secretary of Agriculture felt that testimony presented at hearings justified one. (Producers of market turkeys and hatching eggs are defined in a related question-and-answer analysis starting on page 1.)

In order for the referendum to carry, he said, two-thirds of the producers voting by "number" or by "volume" would have to vote in favor of either the turkey order or egg order or both. It is possible, he noted, that one of the orders would be favored while the other would not.

One vote would be cast by each producer, whether an individual or a company. In addition to a count of these votes, consideration would be given to the volume of turkeys or eggs represented by producers voting in the referendum.

It could happen, Mr. Larkin explained, that the volume vote might be in favor of a marketing order while the number vote would be against it, or vice versa. However, Mr. Larkin noted, in the history of referendums held for regional and state orders, when the number and volume vote totals are split for and against, the Secretary of Agriculture has usually ruled in favor of the number count.

Mr. Larkin also explained that in the volume vote each voting producer would only get credit for his proportionate share of the total volume produced in joint venture. Just how the shares of credit in this situation would be determined has yet to be finalized, he said.

Turkeys Different

Mr. Larkin pointed out that development of the proposed national marketing orders for turkeys and turkey hatching eggs was different from that of other commodities. "Usually the industry works up a proposal and then presents it to the department of agriculture for approval," he noted. "But since turkeys are a new commodity and because national orders were proposed, the department helped in the preparation of the proposed orders."

He related that the National Turkey Federation approached USDA with the possibility of establishing the turkey orders and this was followed with the appointment of a National Turkey Advisory Committee which told USDA what was wanted. USDA then used these desires as a basis for developing the proposals.

"Remember," Mr. Larkin said, "this is a self-help proposition. The orders are developed, administered and enforced by the industry itself. USDA is involved only to protect the producer and the consumer. Any violations would, in reality, be against the industry rather than the government.

"I personally feel that orders such as these are more moderate than they otherwise might be because they are developed, administered, paid for and enforced by the industry."

Costs of administering the orders would be paid for from assessments against "handlers" of turkeys and hatching eggs, Mr. Larkin noted. "Obviously, the handler is going to pass this cost on and the producer actually would be paying for it."

He referred to the maximum assessments stipulated in the proposed orders: 25¢ per 100 hatching eggs or 20¢ per 100 lb. of ready-to-cook turkey.

Mr. Larkin explained that anyone who wishes to be heard at the hearings should reserve dates for appearance by writing to: Hearing Clerk, Room 112A, Administrative Building, U.S. Department of Agriculture, Washington 25, D.C. Although it is not a requirement, the hearing officials prefer that testimony be prepared in writing before it is presented at the hearings.

GROWING

(Continued from page 7)

have been stressing quality too much. We now find that the good bodied cattle, whether they be black, red or white, whether they be broad faced or red necked, have as much chance, maybe more, of grading and yielding well as do the real fancy kind of feeder cattle." He said an animal that will gain rapidly and cheaply, yield a high percentage of red meat with sufficient amount of marbling to grade choice is desirable.

Another change which has been made at the Monfort feedlots is in evaluating data obtained from a test. Until just recently, he explained, we evaluated our test information on the basis of amount of gain per head per day and the cost of that gain. "I am sure that this has been throwing us off in testing some rations in the past. We now carry these tests to the final result. This means that the figure we now come up with is the gain per head per day of beef and the costs of producing a pound of beef in the feedlot.

"A pen of animals that gains 2.4 lb. per head per day for 120 days and yields 63% is actually putting on more beef per day than does a pen which gains three pounds per day for 120 days and yields 59%. We have also determined that it is economical to feed a yearling 180-200 days rather than the maximum 160 days that we used to figure when using the live weight gain factor."

Mr. Monfort said it has been found in the last few years that a lot more milo can be fed. "Now we feed about two thirds of our grain ration as milo if the price is right, meaning less than 90% the cost of corn," he said.

In conclusion, Mr. Monfort told his audience that they and their customers are involved in a "tremendous growth industry."

"There is opportunity wherever we may look—but we must be sharp, for there is also competition wherever we look.

"The feeding business, like the feed business, is competitive. I for one am happy to be in the game. I wouldn't have it any other way."

Districts

The Illinois Feed Assn., in a move to bring its activities closer to local feed and grain dealers, planned a new program placing greater emphasis on frequent meetings in six newly created districts. There were three districts previously.

Under the new arrangement, three directors from each district will be responsible for the association's activities and programs in their local area, thereby giving each board member a smaller area in which to conduct his activities.

Roy F. Hewitt, Hewitt-Ware Feed & Supply Co., Hillsboro, who was reelected Illinois Feed Assn. president, thanked members for the work on projects during the past year and thanked those who planned the convention in his message to the membership.

The organization also opposed marketing orders on poultry and livestock. (Feedstuffs, Nov. 11, p. 1.)

STANDARD

(Continued from page 6)

production was equally high on the mixtures containing both linseed and soybean oil meal or a combination of linseed and urea as on soybean oil meal. It appears likely that differences in nitrogen utilization may become less important after rumen adaptation has occurred."

THE CALCIUM REQUIREMENT OF DAIRY CALVES—Dr. R. A. Wentworth of Cornell told of work which is part of a study designed to obtain information on the amounts of calcium needed by calves for maximum growth, for maximum bone mineralization and optimum health.

For dairy calves between 3 and 6 months of age a ration supplying as little as 5 gm. of calcium daily appears to be adequate for a normal rate of body weight gain and the prevention of a visible deficiency, said Dr. Wentworth. However, the calcium requirement for maximum bone mineralization is greater than 9 gm. per day or that amount supplied by a ration containing 0.22% calcium. Further experiments are being conducted to determine the exact requirement for maximum calcium deposition in bone.

MARKETS

(Continued from page 2)

11.6 lb. a month earlier and 10.3 lb. six months ago.

Broiler mash prices came down a dollar a ton last week, averaging $89.14. The average price paid per pound at the farm for broilers was 12.51¢, making the meat-feed ratio 2.8. The week before a pound of broiler meat would buy 2.7 lb. of feed.

South Central

Formula feed sales are holding up well, with all plants maintaining at least five-day operations; some are running six or more. The only reduction in mill running time noted was by one unit that dropped Saturday overtime because the plant had caught up with cattle feed bookings.

Movement of cattle feeds from other plants may have slowed a bit but good shipments are still being made. Hog feed deliveries are substantial, and there is an increasing amount of pig ration business coming in. Virtually the only complaint that feed manufacturers voice is over the slack movement of poultry feeds.

Mountain States

Snows on the ranges this week started cattle moving to the feed yards in increasing numbers and feed volume is rapidly rising. Cattle were moving slowly before the snows with the feed ranges in good grazing shape in most areas of the state and the best in 10 years on the western slope, according to the Colorado Crop and Livestock Report.

Prices generally are steady to stronger.

Pacific Northwest

Formula feed movement throughout Oregon, Washington and Idaho was still on the slow side this week. Portland trade sources indicated that the demand for turkey rations is limited to breeding flocks and a few scattered flocks of unmarketed birds.

Broiler production is seasonally limited while the call for egg mash is about the same as that of a month ago. The demand, however, has increased for livestock and dairy feeds.

Portland's egg market continued strong for the second consecutive week, with producer paying prices closing 2¢ a dozen higher across the board. AA extra large eggs brought poultrymen 40 to 44½¢ a dozen, f.o.b. Willamette Valley farms, with AA large ones listed at 37 to 42½¢.

Southern California

"Inactive" is probably the best term for describing the Southern California feed business this week.

Prices are about unchanged even though corn and soybean meal prices increased slightly. Feed sales and production have declined due to the heavy turkey movement. This condition is expected to continue for the next 60 days.

Although medium sized eggs increased 2¢ doz., both large and small egg prices remained unchanged. Most poultrymen feel steady prices will prevail the next 60 days, but after the new year, a large supply of eggs could depress this market.

Broilermen continue puzzled with market prices below production cost but feel unwarranted credit is keeping the smaller inefficient growers in business. A marketing order program established by the federal government is favored but not federal controls.

The turkey markets have improved somewhat as hens are selling at 20½ to 21¢ lb. f.o.b. ranch, while toms are trading at 18¢ lb. Producers are hopeful that still higher prices will exist during the holiday seasons. Some growers or contractors are losing $1 to $1.40 per bird.

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USDA Selling Barley In Minneapolis Area

WASHINGTON—The U.S. Department of Agriculture has announced that it is now offering Commodity Credit Corp.-owned barley for sale at market price from warehouses and CCC bin sites in the area served by the Minneapolis Agricultural Stabilization and Conservation Service commodity office.

This area includes Minnesota, North Dakota, South Dakota, Montana and Wisconsin.

The announcement said that sales from CCC bin sites will be handled by ASCS county offices and from warehouses by the Minneapolis commodity office. In order to maximize purchasing opportunity for feed users, the commodity office and state ASC committees have been authorized to establish quantity limits on individual transactions, it was stated. Sales of feed barley by county offices in states in which the emergency livestock feed program is in operation will be limited to livestock owners (including poultrymen) for use in feeding their livestock and poultry, USDA said.

These dispositions will be in redemption of certificates represented by payments under the 1961 Feed Grain Program.

This action amends the CCC sales list for November, it was noted.

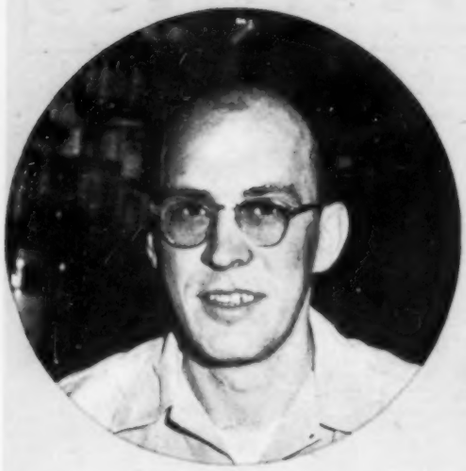
Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 9	1,240	268	736	613	57	787	1,623	1,914
September 16	1,166	256	683	658	74	643	1,518	1,945
September 23	674	269	655	521	72	639	1,407	1,918
September 30	1,126	291	625	478	57	649	1,379	1,937
October 7	1,137	248	644	494	56	573	1,355	1,667
October 14	1,058	219	600	449	66	607	1,259	1,853
October 21	953	236	432	456	18	593	1,184	1,888
October 28	1,158	257	539	455	38	571	1,514	1,907
November 4	1,165	242	701	517	65	679	1,529	2,056
November 11	1,105	244	763	569	54	684	1,695	1,911

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 9	818	381	3,205	385	6,129	220	3,401	2,225
September 16	817	249	3,130	363	5,834	199	3,343	2,134
September 23	682	369	2,989	345	5,661	216	3,286	2,098
September 30	736	247	3,029	379	5,712	156	3,376	2,156
October 7	739	245	2,979	348	5,325	151	3,388	2,001
October 14	712	273	2,889	345	5,455	157	3,372	1,944
October 21	711	245	2,738	322	5,274	174	3,204	1,936
October 28	666	176	2,761	373	5,433	198	3,278	2,138
November 4	716	263	2,816	316	5,512	201	3,474	2,123
November 11	776	353	2,877	349	5,551	205	3,476	2,153

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1961	Total 22 areas 1960
September 9	3,765	381	2,056	269	208	1,081	31,762	29,246
September 16	3,713	368	1,922	225	170	979	30,389	28,624
September 23	3,564	382	1,816	282	141	980	28,966	28,656
September 30	3,616	402	1,782	234	176	1,067	29,610	28,551
October 7	3,579	394	1,666	296	176	1,082	28,548	28,442
October 14	3,468	407	1,632	291	141	1,049	28,246	28,355
October 21	3,441	337	1,700	261	78	943	27,094	28,165
October 28	3,312	350	1,726	221	109	948	28,128	28,639
November 4	3,107	397	1,759	235	168	945	28,986	29,157
November 11	3,327	371	1,741	236	191	989	29,620	29,970



Sam Cummings, manager of Pleasant Plains Farmers Elevator, Pleasant Plains, Illinois

FEEDSTUFFS, April 8, 1961

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